

An Equity Profile of the
**Five-County San Francisco
Bay Area Region**

2017 updated analyses and projections

THE
SAN
FRANCISCO
FOUNDATION

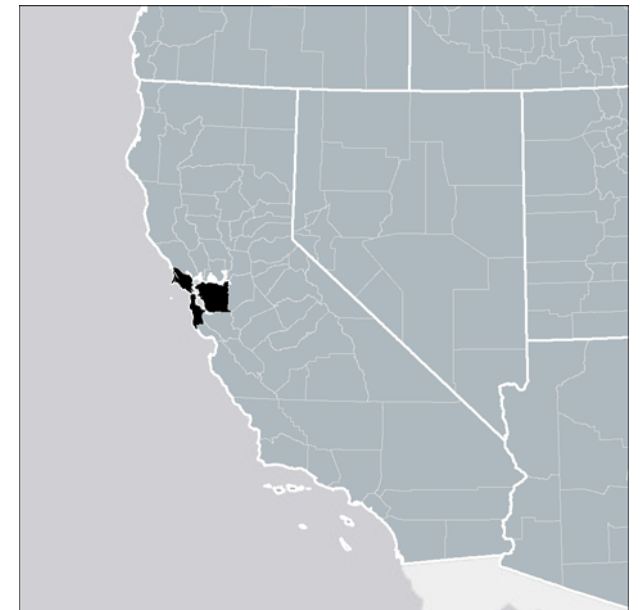
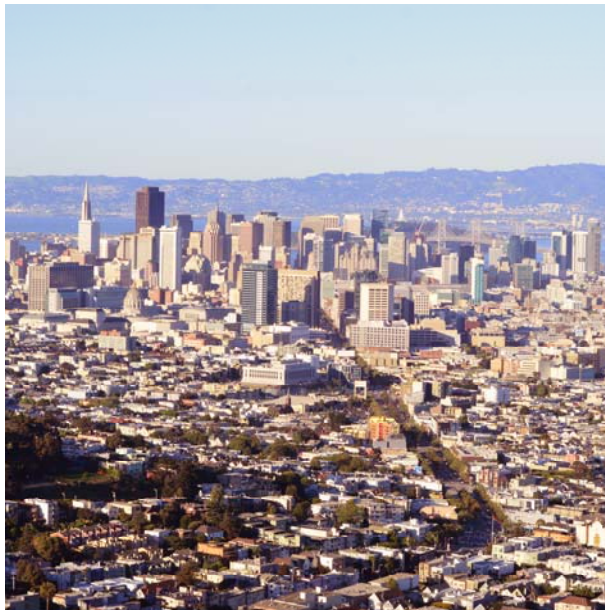


Table of contents

3	Summary
7	Foreword
8	Introduction
14	Demographics
26	Economic vitality
62	Readiness
75	Connectedness
88	Economic benefits
94	Data and methods

Equity Profiles are products of a partnership between PolicyLink and PERE, the Program for Environmental and Regional Equity at the University of Southern California.

The views expressed in this document are those of PolicyLink and PERE, and do not necessarily represent those of The San Francisco Foundation.

Summary

The five-county San Francisco Bay Area region is already a majority people-of-color region, and communities of color will continue to drive growth and change into the foreseeable future. The region's diversity is a tremendous economic asset – if people of color are fully included as workers, entrepreneurs, and innovators. But while the Bay Area economy is booming, rising inequality, stagnant wages, and persistent racial inequities place its long-term economic future at risk.

In fact, closing racial gaps in income would boost the regional economy by nearly \$138 billion. Equitable growth is the path to sustained economic prosperity. To build a Bay Area economy that works for all, regional leaders must commit to putting all residents on the path to economic security through strategies to grow good jobs, build capabilities, remove barriers, and expand opportunities for the people and places being left behind.

Indicators

Demographics

- 16 Race/Ethnicity and Nativity, 2014
- 16 Latino and Asian or Pacific Islander Populations by Ancestry, 2014
- 17 Diversity Score in 2014: Largest 150 Metros Ranked
- 18 Racial/Ethnic Composition, 1980 to 2014
- 18 Composition of Net Population Growth by Decade, 1980 to 2014
- 19 Growth Rates of Major Racial/Ethnic Groups, 2000 to 2014
- 19 Share of Net Growth in Latino and Asian or Pacific Islander (API) Population by Nativity, 2000 to 2014
- 20 Percent Change in Population, 2000 to 2014
- 21 Percent Change in People of Color by Census Block Group, 2000 to 2014
- 22 Racial/Ethnic Composition by Census Block Group, 1990 and 2014
- 23 Racial/Ethnic Composition, 1980 to 2050
- 24 Racial Generation Gap: Percent People of Color (POC) by Age Group, 1980 to 2014
- 24 Median Age by Race/Ethnicity, 2014
- 25 The Racial Generation Gap in 2014: Largest 150 Metros Ranked

Economic vitality

- 28 Cumulative Job Growth, 1979 to 2014

- 28 Cumulative Growth in Real GRP, 1979 to 2014
- 29 Unemployment Rate, 1990 to 2015
- 30 Cumulative Growth in Jobs-to-Population Ratio, 1979 to 2014
- 31 Labor Force Participation Rate by Race/Ethnicity, 1990 and 2014
- 31 Unemployment Rate by Race/Ethnicity, 1990 to 2014
- 32 Unemployment Rate by Race/Ethnicity, 2014
- 33 Unemployment Rate by Census Tract, 2014
- 34 Gini Coefficient, 1979 to 2014
- 35 The Gini Coefficient in 2014: Largest 150 Metros Ranked
- 36 Real Earned Income Growth for Full-Time Wage and Salary Workers Ages 25-64, 1979 to 2014
- 37 Median Hourly Wage by Race/Ethnicity, 2000 and 2014
- 38 Household by Income Level, 1979 and 2014
- 39 Racial Composition of Middle-Class Households and All Households, 1979 and 2014
- 40 Poverty Rate, 1980 to 2014
- 40 Working-Poverty Rate, 1980 to 2014
- 41 Working-Poverty Rate in 2014: Largest 150 Metros Ranked
- 42 Poverty Rate by Race/Ethnicity and Nativity, 2014
- 42 Working-Poverty Rate by Race/Ethnicity and Nativity, 2014

Indicators

Economic vitality (continued)

- 43 Unemployment Rate by Educational Attainment and Race/Ethnicity, 2014
- 44 Median Hourly Wage by Educational Attainment and Race/Ethnicity, 2014
- 45 Unemployment Rate by Educational Attainment, Race/Ethnicity, and Gender, 2014
- 45 Median Hourly Wage by Educational Attainment, Race/Ethnicity, and Gender, 2014
- 46 Growth in Jobs and Earnings by Industry Wage Level, 1990 to 2015
- 47 Industries by Wage-Level Category in 1990 and 2015
- 48 Industry Employment Projections, 2014 to 2024
- 49 Occupations Employment Projections, 2014 to 2024
- 50 Industry Strength Index
- 52 Occupation Opportunity Index
- 55 Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a High School Diploma or Less
- 56 Occupation Opportunity Index: Occupations by Opportunity Level for Workers with More Than a High School Diploma but Less Than a Bachelor's Degree

- 57 Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a Bachelor's Degree or Higher
- 58 Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, All Workers
- 59 Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Low Educational Attainment
- 60 Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment
- 61 Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with High Educational Attainment

Readiness

- 64 Educational Attainment by Race/Ethnicity, 2014
- 65 Share of Working-Age Population with an Associate's Degree or Higher by Race/Ethnicity and Nativity, 2014 and Projected Share of Jobs that Require an Associate's Degree or Higher, 2020
- 66 Percent of the Population with an Associate's Degree or Higher in 2014: Largest 150 Metros Ranked
- 67 Asian or Pacific Islander Immigrants, Percent with an Associate's Degree or Higher by Origin, 2014
- 67 Latino Immigrants, Percent with an Associate's Degree or Higher by Origin, 2014

Indicators

Readiness (continued)

- 68 Percent of 16- to 24-Year-Olds Not Enrolled in School and Without a High School Diploma, 1990 to 2014
- 69 Disconnected Youth: 16- to 24-Year-Olds Not in Work or School, 1980 to 2014
- 70 Percent of 16- to 24-Year-Olds Not in Work or School, 2014: Largest 150 Metros Ranked
- 71 Percent Living in Limited Supermarket Access Areas by Race/Ethnicity, 2014
- 72 Poverty Composition of Food Environments, 2014
- 73 Percent People of Color by Census Block Group and Limited Supermarket Access Block Groups, 2014
- 74 Adult Overweight and Obesity Rates by Race/Ethnicity, 2012
- 74 Adult Diabetes Rates by Race/Ethnicity, 2012
- 74 Adult Asthma Rates by Race/Ethnicity, 2012

Connectedness

- 77 Residential Segregation, 1980 to 2014
- 78 Residential Segregation, 1990 and 2014, Measured by the Dissimilarity Index
- 79 Percent Population Below the Poverty Level by Census Tract, 2014

- 80 Percent Using Public Transit by Annual Earnings and Race/Ethnicity and Nativity, 2014
- 80 Percent of Households Without a Vehicle by Race/Ethnicity, 2014
- 81 Means of Transportation to Work by Annual Earnings, 2014
- 82 Percent of Households Without a Vehicle by Census Tract, 2014
- 83 Average Travel Time to Work by Census Tract, 2014
- 84 Share of Households that Are Rent Burdened, 2014: Largest 150 Metros Ranked
- 85 Renter Housing Burden by Race/Ethnicity, 2014
- 85 Homeowner Housing Burden by Race/Ethnicity, 2014
- 86 Low-Wage Jobs and Affordable Rental Housing by County, 2014
- 87 Low-Wage Jobs, Affordable Rental Housing, and Jobs-Housing Ratios by County

Economic benefits

- 90 Actual GDP and Estimated GDP Without Racial Gaps in Income, 2014
- 91 Percentage Gain in Income with Racial Equity by Race/Ethnicity, 2014
- 92 Gain in Average Income with Racial Equity by Race/Ethnicity, 2014
- 93 Source of Gains in Income with Racial Equity By Race/Ethnicity, 2014

Foreword

The 2017 Five-County San Francisco Bay Area Equity Profile is an update to the initial profile released two years ago. The revised profile includes the following changes.

- Updated information on a wide variety of indicators from the 2014 five-year American Community Survey*
- Updated demographic projections that extend to 2050*
- More detail on immigrant and native-born residents*
- An updated analysis of access to healthy food*
- New industry and occupational projections for the region*
- An updated and more detailed analysis of the economic benefits of inclusion*

For similar data on the nine-county Bay Area, please see the [Nine-County San Francisco Bay Area Equity Profile](#).

Advancing economic and racial equity is the defining challenge of our time. In the Bay Area, far too many of our families are being left behind, struggling to make ends meet, spending two-thirds of their income on housing and transportation alone. As a region, we are experiencing some of the greatest inequities in wealth and income in the nation.

Our region is also the second most diverse in the country, and a microcosm of the nation's future. Communities of color are already the majority in the Bay Area. Our diverse, growing population is a major asset that can only be fully realized when all communities have the resources and opportunities they need to participate, prosper, and reach their full potential.

This Five-County San Francisco Bay Area Equity Profile adds to the growing body of research that finds that greater economic and racial inclusion fosters stronger economic growth and a more equitable region. When we are talking about innovation, when we are talking about making the economy work for families and children, we are talking about geography, race, and class. We must take bold steps to build pathways of opportunity for communities of color and those at the lowest rungs of the economic ladder in partnership with the public and private sectors.

Our call to action is clear. When we innovate and create new models for economic growth here in the Bay Area, we are making change that will become a model for our nation. This work will take patience. It will take partnership. It will take fortitude. Now is the time to take action to achieve new models for economic growth.



Fred Blackwell

Chief Executive Officer

The San Francisco Foundation

Introduction



Introduction

Overview

Across the country, regional planning organizations, local governments, community organizations and residents, funders, and policymakers are striving to put plans, policies, and programs in place that build healthier, more vibrant, more sustainable, and more equitable regions.

Equity – fair and just inclusion into a society in which all can participate, prosper, and reach their full potential – is an essential element of the plans.

Knowing how a region stands in terms of equity is a critical first step in planning for greater equity. To assist communities with that process, PolicyLink and the Program for Environmental and Regional Equity (PERE) developed an equity indicators framework that communities can use to understand and track the state of equity in their regions.

This document presents an equity analysis of the five-county San Francisco Bay Area region. It was developed to help The San Francisco Foundation effectively address equity issues through its grantmaking for a more integrated and sustainable region. PolicyLink and PERE also hope this will be a useful tool for advocacy groups, elected officials, planners, and others.

The data in this profile are drawn from a regional equity database that includes data for the largest 150 regions in the United States. This database incorporates hundreds of data points from public and private data sources including the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, the Behavioral Risk Factor Surveillance System (BRFSS), and Woods & Poole Economics, Inc. See the "Data and methods" section of this profile for a detailed list of data sources.

Introduction

Defining the region

Throughout this profile and data analysis, the five-county Bay Area region is defined as the San Francisco-Oakland-Fremont Metropolitan Statistical Area, which includes Alameda, Contra Costa, Marin, San Francisco, and San Mateo counties.

Unless otherwise noted, all data presented in the profile follow this five-county geography, which is sometimes referred to simply as the “Bay Area” or “five-county region.” Some exceptions due to lack of data availability are noted beneath the relevant figures. Information on data sources and methodology can be found in the “Data and methods” section beginning on page 94.



Introduction

Why equity matters now

The face of America is changing.

Our country's population is rapidly diversifying. Already, more than half of all babies born in the United States are people of color. By 2030, the majority of young workers will be people of color. And by 2044, the United States will be a majority people-of-color nation.

Yet racial and income inequality is high and persistent.

Over the past several decades, long-standing inequities in income, wealth, health, and opportunity have reached unprecedented levels. Wages have stagnated for the majority of workers, inequality has skyrocketed, and many people of color face racial and geographic barriers to accessing economic opportunities.

Racial and economic equity is necessary for economic growth and prosperity.

Equity is an economic imperative as well as a moral one. Research shows that inclusion and diversity are win-win propositions for nations, regions, communities, and firms.

For example:

- More equitable regions experience stronger, more sustained growth.¹
- Regions with less segregation (by race and income) and lower income inequality have more upward mobility.²
- The elimination of health disparities would lead to significant economic benefits from reductions in health-care spending and increased productivity.³
- Companies with a diverse workforce achieve a better bottom line.⁴
- A diverse population more easily connects to global markets.⁵
- Less economic inequality results in better health outcomes for everyone.⁶

The way forward is with an equity-driven growth model.

To secure America's health and prosperity, the nation must implement a new economic model based on equity, fairness, and opportunity. Leaders across all sectors must remove barriers to full participation, connect more people to opportunity, and invest in human potential.

Regions play a critical role in shifting to inclusive growth.

Local communities are where strategies are being incubated to foster equitable growth: growing good jobs and new businesses while ensuring that all – including low-income people and people of color – can fully participate as workers, consumers, entrepreneurs, innovators, and leaders.

¹ Manuel Pastor, "Cohesion and Competitiveness: Business Leadership for Regional Growth and Social Equity," OECD Territorial Reviews, Competitive Cities in the Global Economy, Organisation For Economic Co-Operation And Development (OECD), 2006; Manuel Pastor and Chris Benner, "Been Down So Long: Weak-Market Cities and Regional Equity" in Retooling for Growth: Building a 21st Century Economy in America's Older Industrial Areas (New York: American Assembly and Columbia University, 2008); Randall Eberts, George Erickcek, and Jack Kleinhenz, "Dashboard Indicators for the Northeast Ohio Economy: Prepared for the Fund for Our Economic Future" (Cleveland, OH: Federal Reserve Bank of Cleveland, 2006), <https://www.clevelandfed.org/newsroom-and-events/publications/working-papers/working-papers-archives/2006-working-papers/wp-0605-dashboard-indicators-for-the-northeast-ohio-economy.aspx>.

² Raj Chetty, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez, "Where is the Land of Economic Opportunity? The Geography of Intergenerational Mobility in the U.S.," Quarterly Journal of Economics 129 (2014): 1553-1623, http://www.equality-of-opportunity.org/assets/documents/mobility_geo.pdf.

³ Darrell Gaskin, Thomas LaVeist, and Patrick Richard, The State of Urban Health: Eliminating Health Disparities to Save Lives and Cut Costs (New York, NY: National Urban League Policy Institute, 2012).

⁴ Cedric Herring, "Does Diversity Pay?: Race, Gender, and the Business Case for Diversity," American Sociological Review 74 (2009): 208-22; Slater, Weigand and Zwirlein, "The Business Case for Commitment to Diversity," Business Horizons 51 (2008): 201-209.

⁵ U.S. Census Bureau, "Ownership Characteristics of Classifiable U.S. Exporting Firms: 2007," Survey of Business Owners Special Report, June 2012, https://www2.census.gov/econ/sbo/07/sbo_export_report.pdf.

⁶ Kate Pickett and Richard Wilkinson, "Income Inequality and Health: A Causal Review," Social Science & Medicine 128 (2015): 316-326.

Introduction

What is an equitable region?

Regions are equitable when all residents – regardless of their race/ethnicity and nativity, gender, or neighborhood of residence – are fully able to participate in the region’s economic vitality, contribute to the region’s readiness for the future, and connect to the region’s assets and resources.

Strong, equitable regions:

- Possess **economic vitality**, providing high-quality jobs to their residents and producing new ideas, products, businesses, and economic activity so the region remains sustainable and competitive.
- Are **ready for the future**, with a skilled, ready workforce, and a healthy population.
- Are **places of connection**, where residents can access the essential ingredients to live healthy and productive lives in their own neighborhoods, reach opportunities located throughout the region (and beyond) via transportation or technology, participate in political processes, and interact with other diverse residents.

Introduction

Equity indicators framework

The indicators in this profile are presented in five sections. The first section describes the region's demographics. The next three sections present indicators of the region's economic vitality, readiness, and connectedness. The final section explores the economic benefits of equity. Below are the questions answered within each of the five sections.

Demographics:

Who lives in the region, and how is this changing?

- Is the population growing?
- Which groups are driving growth?
- How diverse is the population?
- How does the racial composition vary by age?

Economic vitality:

How is the region doing on measures of economic growth and well-being?

- Is the region producing good jobs?
- Can all residents access good jobs?
- Is growth widely shared?
- Do all residents have enough income to sustain their families?
- Are race/ethnicity and nativity barriers to economic success?
- What are the strongest industries and occupations?

Readiness:

How prepared are the region's residents for the 21st century economy?

- Does the workforce have the skills for the jobs of the future?
- Are all youth ready to enter the workforce?
- Are residents healthy? Do they live in health-promoting environments?
- Are health disparities decreasing?
- Are racial gaps in education decreasing?

Connectedness:

Are the region's residents and neighborhoods connected to one another and to the region's assets and opportunities?

- Do residents have transportation choices?
- Can residents access jobs and opportunities located throughout the region?
- Can all residents access affordable, quality, convenient housing?
- Do neighborhoods reflect the region's diversity? Is segregation decreasing?

Economic benefits:

What are the benefits of racial economic inclusion to the broader economy?

- What are the projected economic gains of racial equity?
- Do these gains come from closing racial wage or employment gaps?

Demographics



Demographics

Highlights

Who lives in the region, and how is this changing?

- The five-county San Francisco Bay Area is 58 percent people of color. Asians or Pacific Islanders and Latinos make up a growing share of the population accounting for 24 and 22 percent, respectively, of the total population.
- The region is the second most diverse among the largest 150 metro areas, surpassed only by Vallejo-Fairfield, California.
- Asians or Pacific Islanders and Latinos will continue to drive growth and change in the region over the next several decades.
- Marin County is the least diverse of the five counties in the region, but the people-of-color population grew more than eight times as fast as the total population since 2000.
- There is a large racial generation gap between the region's mainly White senior population and its increasingly diverse youth population.

People-of-color population share in 2014:

58%

Diversity rank (out of the largest 150 regions):

#2

Latino population share by 2050:

31%

Demographics

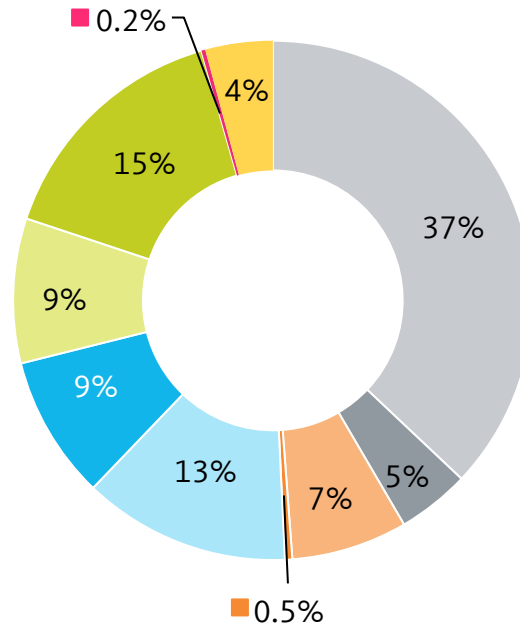
One of the most diverse regions

Fifty-eight percent of residents in the San Francisco Bay Area region are people of color, including many different racial and ethnic groups. Non-Hispanic Whites are the single largest group (42 percent) followed by Asians or Pacific Islanders (24 percent) and Latinos (22 percent).

The Latino population is predominately of Mexican ancestry (57 percent), though a significant proportion are of Salvadoran ancestry (7 percent). The Asian or Pacific Islander population is also diverse with people of Chinese, Filipino, and Indian ancestries making up the largest subgroups.

The Bay Area is majority people of color
Race/Ethnicity and Nativity, 2014

- White, U.S.-born
- White, Immigrant
- Black, U.S.-born
- Black, Immigrant
- Latino, U.S.-born
- Latino, Immigrant
- API, U.S.-born
- API, Immigrant
- Native American
- Mixed/other



Source: Integrated Public Use Microdata Series; U.S. Census Bureau.
Note: Data represent a 2010 through 2014 average. The Integrated Public Use Microdata Series American Community Survey (ACS) microdata was adjusted to match the ACS summary file percentages by race/ethnicity.

Mexicans make up the largest Latino subgroup while people of Chinese ancestry make up the largest API subgroup
Latino and Asian or Pacific Islander Populations by Ancestry, 2014

Latino	Population
Mexican	552,448
Salvadoran	65,815
Guatemalan	32,448
Nicaraguan	23,141
Puerto Rican	16,996
All other Latinos	284,319
Total	975,167

Asian or Pacific Islander	Population
Chinese	403,419
Filipino	216,486
Indian	130,799
Vietnamese	55,077
Japanese	41,965
Korean	39,077
All other Asians	201,722
Total	1,088,545

Source: Integrated Public Use Microdata Series.
Note: Data represent a 2010 through 2014 average.

Demographics

One of the most diverse regions

(continued)

The five-county Bay Area region is the nation’s second most diverse metropolitan area out of the largest 150 regions. The Bay Area has a diversity score of 1.39; only the Vallejo-Fairfield region is more diverse.

The diversity score is a measure of racial/ethnic diversity a given area. It measures the representation of the six major racial/ethnic groups (White, Black, Latino, Asian or Pacific Islander, Native American, and Other/mixed race) in the population. The maximum possible diversity score (1.79) would occur if each group were evenly represented in the region – that is, if each group accounted for one-sixth of the total population.

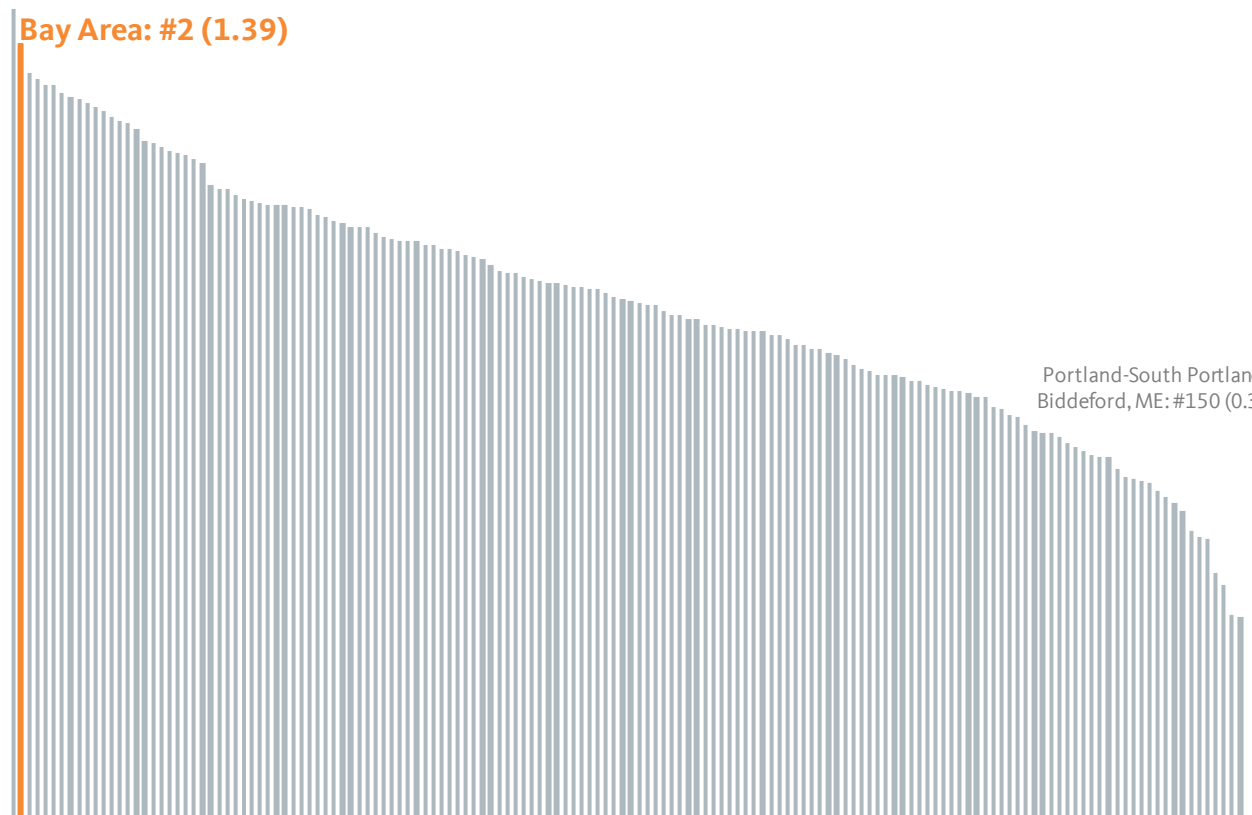
Note that the diversity score describes the region as a whole and does not measure racial segregation, or the extent to which different racial/ethnic groups live in different neighborhoods. Segregation measures can be found on pages 77-78.

The Bay Area is the second most diverse region
Diversity Score in 2014: Largest 150 Metros Ranked

Vallejo-Fairfield, CA: #1 (1.45)

Bay Area: #2 (1.39)

Portland-South Portland-Biddeford, ME: #150 (0.36)



Source: U.S. Census Bureau.
 Note: Data represent a 2010 through 2014 average.

Demographics

Dramatic growth and change over the past several decades

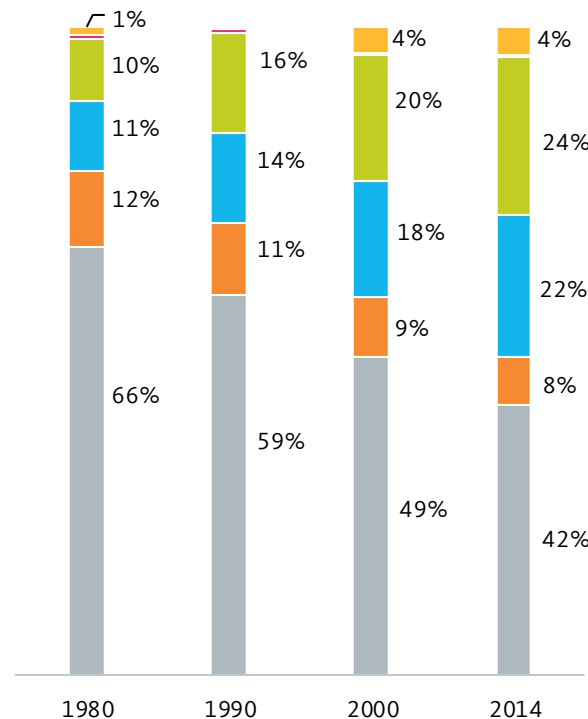
Despite a decreasing White population since 1980, the Bay Area has experienced significant population growth. The five-county region grew from nearly 3.3 million to 4.5 million residents between 1980 and 2014.

In the same time period, it has become a majority people-of-color region, increasing from 34 percent people of color to 58 percent people of color.

People of color have driven the region's growth over the past three decades, contributing 97 percent of the growth in the 1980s and driving all growth in the 1990s and 2000s.

The population has rapidly diversified
Racial/Ethnic Composition, 1980 to 2014

- Mixed/other
- Native American
- Asian or Pacific Islander
- Latino
- Black
- White

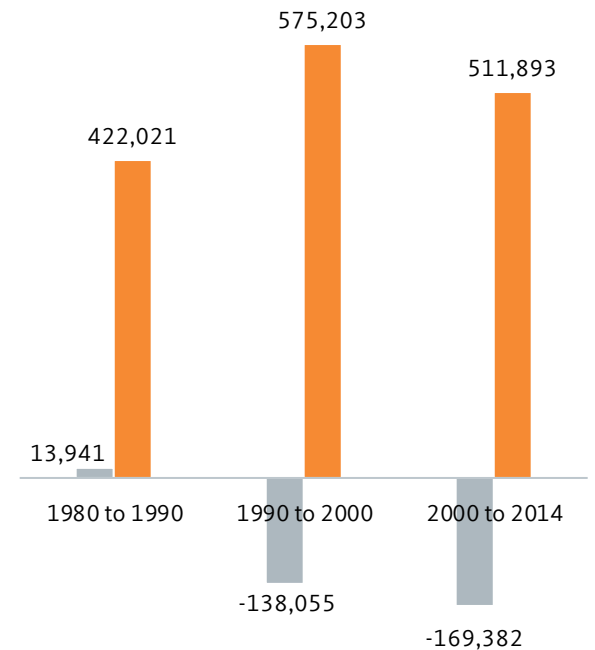


Source: U.S. Census Bureau.
Note: Data for 2014 represent a 2010 through 2014 average. Much of the increase in the Mixed/other population between 1990 and 2000 is due to a change in the survey question on race.

The White population has declined each decade since 1990 while the people-of-color population has grown

Composition of Net Population Growth by Decade, 1980 to 2014

- White
- People of Color



Source: U.S. Census Bureau.
Note: Data for 2014 represent a 2010 through 2014 average.

Demographics

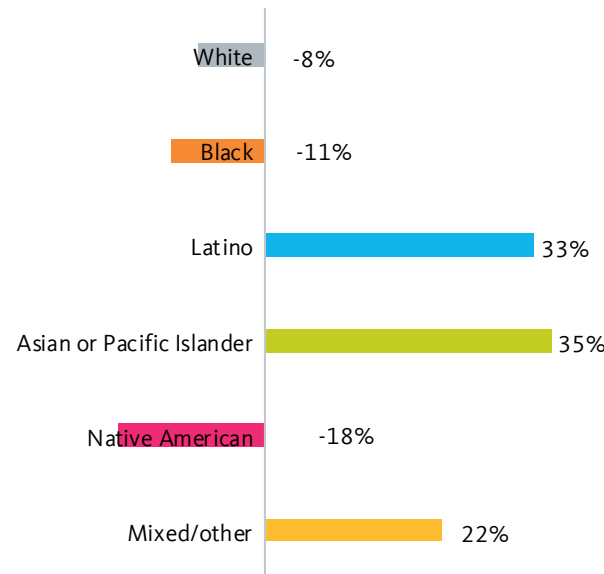
Latinos and Asians or Pacific Islanders are leading the region's growth

Since 2000, the Bay Area's Asian or Pacific Islander population grew fastest – by 35 percent – adding over 283,000 residents to the total population. The Latino population followed closely, growing by 33 percent, or nearly 242,000 residents.

Over the same time period, the region's White, Black, and Native American populations decreased. The White population saw the greatest absolute decrease of 169,000 people.

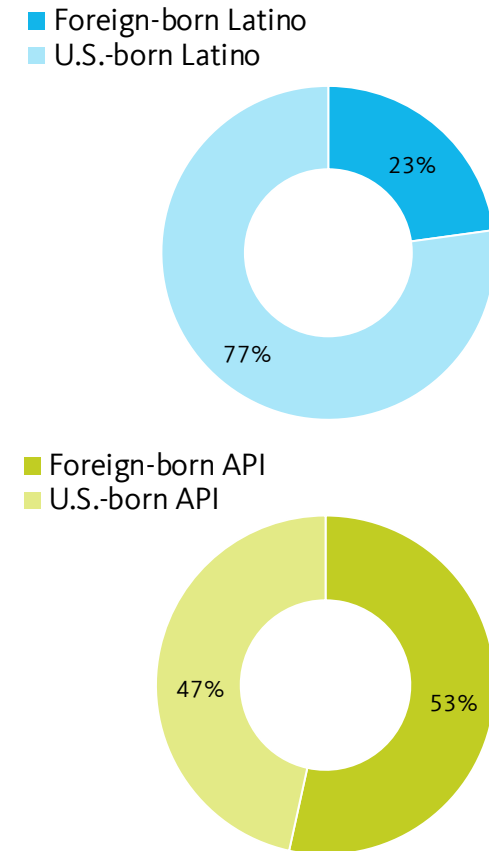
Immigration played a larger role in the growth of the Bay Area's Asian or Pacific Islander population than its Latino population: 53 percent of the growth in the Asian or Pacific Islander population was from foreign-born residents, while only 23 percent of growth in the Latino population was from immigrants.

The Latino and Asian or Pacific Islander populations experienced the most growth since 2000
Growth Rates of Major Racial/Ethnic Groups, 2000 to 2014



Source: U.S. Census Bureau.
 Note: Data for 2014 represent a 2010 through 2014 average.

Latino population growth was mainly due to an increase in U.S.-born Latinos, while immigration had a larger contribution to growth in the Asian population
Share of Net Growth in Latino and Asian or Pacific Islander Population by Nativity, 2000 to 2014



Source: Integrated Public Use Microdata Series.
 Note: Data for 2014 represent a 2010 through 2014 average.

Demographics

People of color are driving growth throughout the region

All counties in the region experienced population growth over the past decade, and in every county the people-of-color population grew at a faster rate than the population as a whole.

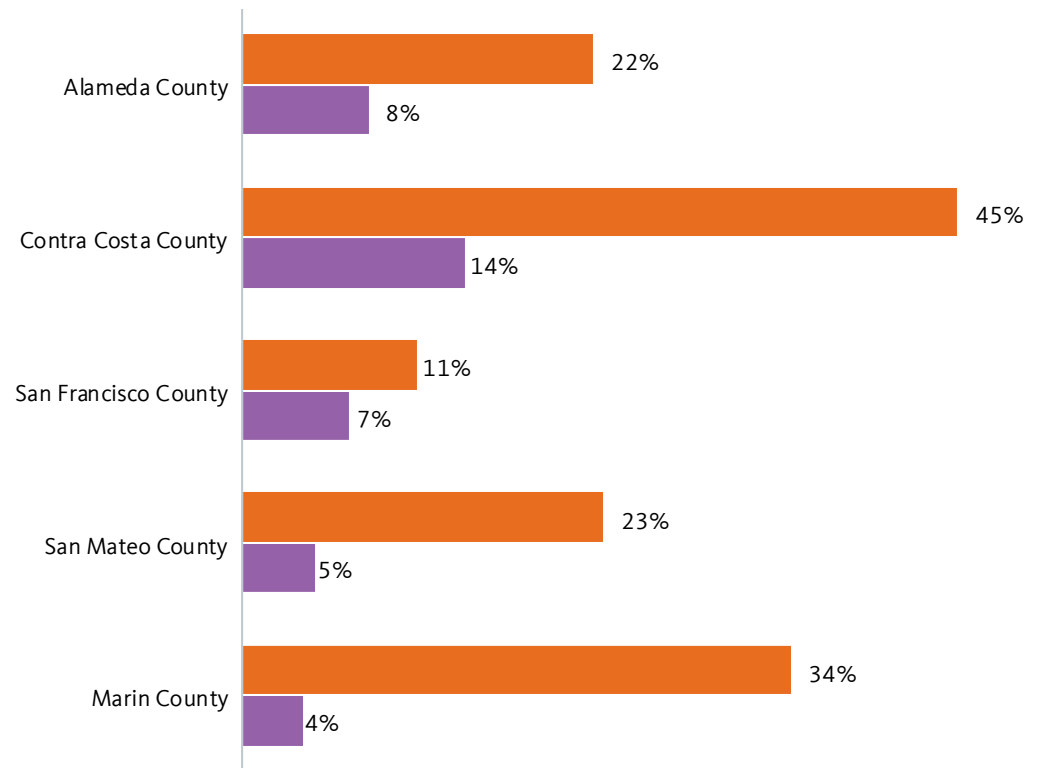
Alameda County grew 8 percent overall, but the people-of-color population grew 22 percent. Similarly, while Contra Costa County’s total population grew 14 percent, its people-of-color population grew three times faster at 45 percent – more than any other county in the region.

Marin County, the least diverse of the five counties, had a significantly larger growth in its people-of-color population compared to the total population. In fact, people-of-color growth was more than eight times as high as total population growth. The people-of-color population grew the slowest in San Francisco County, but still faster than the total population.

The people-of-color population is growing faster than the overall population in every county

Percent Change in Population, 2000 to 2014 (in descending order by 2014 county population)

- People-of-Color Growth
- Total Population Growth



Source: U.S. Census Bureau.
 Note: Data for 2014 represent a 2010 through 2014 average.

Demographics

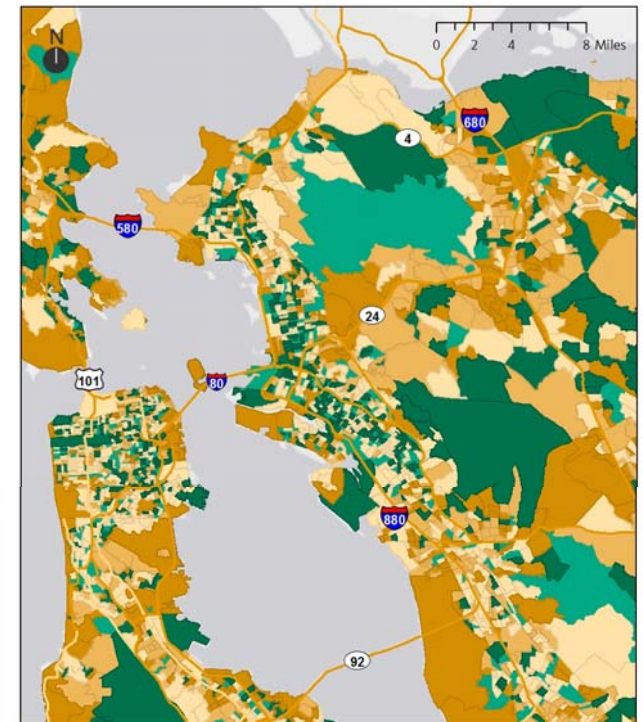
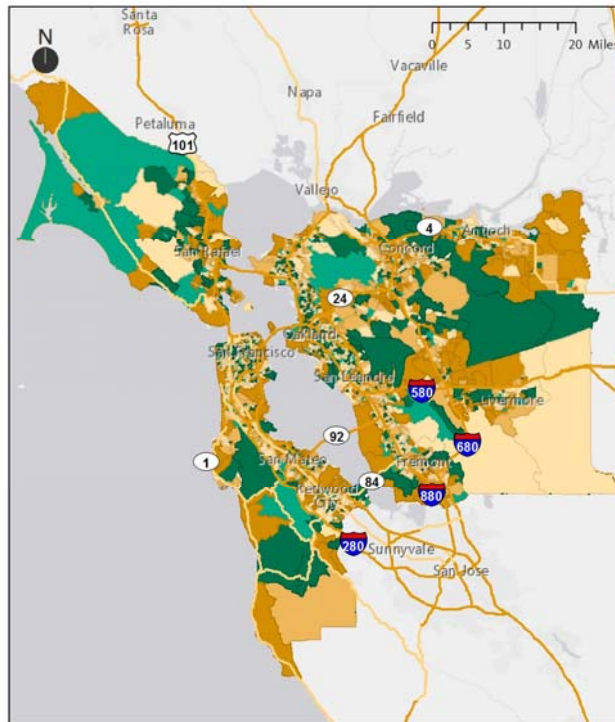
People of color are driving growth throughout the region

(continued)

Mapping the growth in people of color by census block group illustrates growing communities of color throughout all of the region’s counties. Although this growth is slower in the most diverse, inner-core areas in the region (San Francisco and Oakland), the people-of-color population is increasing most rapidly in the eastern portions of Contra Costa and Alameda counties and in San Mateo County as well.

Significant growth in communities of color throughout the region
Percent Change in People of Color by Census Block Group, 2000 to 2014

- Decline of 15% or more
- Decline of less than 15% or no growth
- Increase of less than 36%
- Increase of 36% to 85%
- Increase of 85% or more



Sources: U.S. Census Bureau, GeoLytics, Inc.; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community.
 Note: One should keep in mind when viewing this map and others that display a share or rate that while there is wide variation in the size (land area) of the census block groups in the region, each has a roughly similar number of people. Thus, a large block group on the region’s periphery likely contains a similar number of people as a seemingly tiny one in the urban core, so care should be taken not to assign an unwarranted amount of attention to large block groups just because they are large. Data for 2014 represent a 2010 through 2014 average.

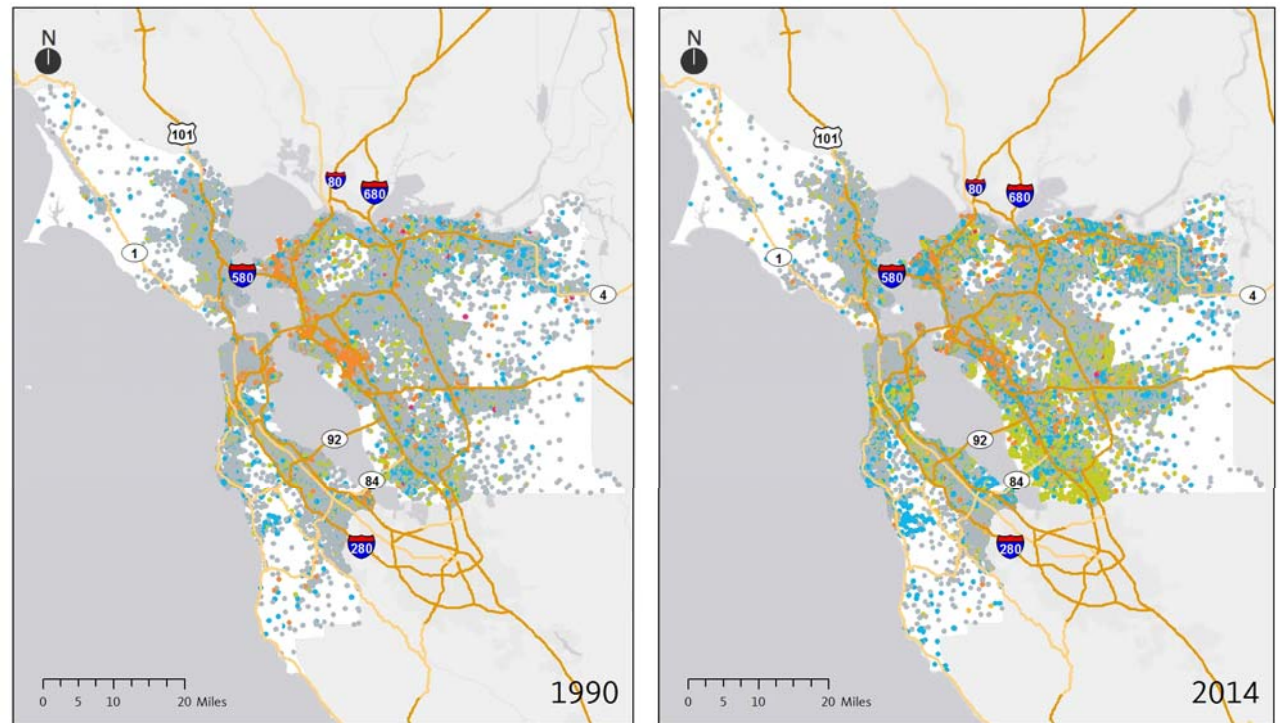
Demographics

Suburban areas are becoming more diverse

Since 1990, the region’s population has grown by 780,000 residents. This growth can be seen throughout the region, but is most notable in the inland areas – particularly eastern Contra Costa and Alameda counties. The cities of Concord, Pittsburg, Antioch, Dublin, and Livermore have seen large growth in their Latino and African American communities. The Asian or Pacific Islander population has grown significantly in the East Bay in Oakland, Union City, and Fremont, and along the Peninsula between San Francisco and San Jose.

Diversity is spreading outwards
Racial/Ethnic Composition by Census Block Group, 1990 and 2014

- Race/ethnicity
 1 Dot = 35 people
- White
 - Black
 - Latino
 - Asian or Pacific Islander
 - Native American
 - Mixed/other



Sources: U.S. Census Bureau, GeoLytics, Inc.; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community.
 Note: Data for 2014 represent a 2010 through 2014 average.

Demographics

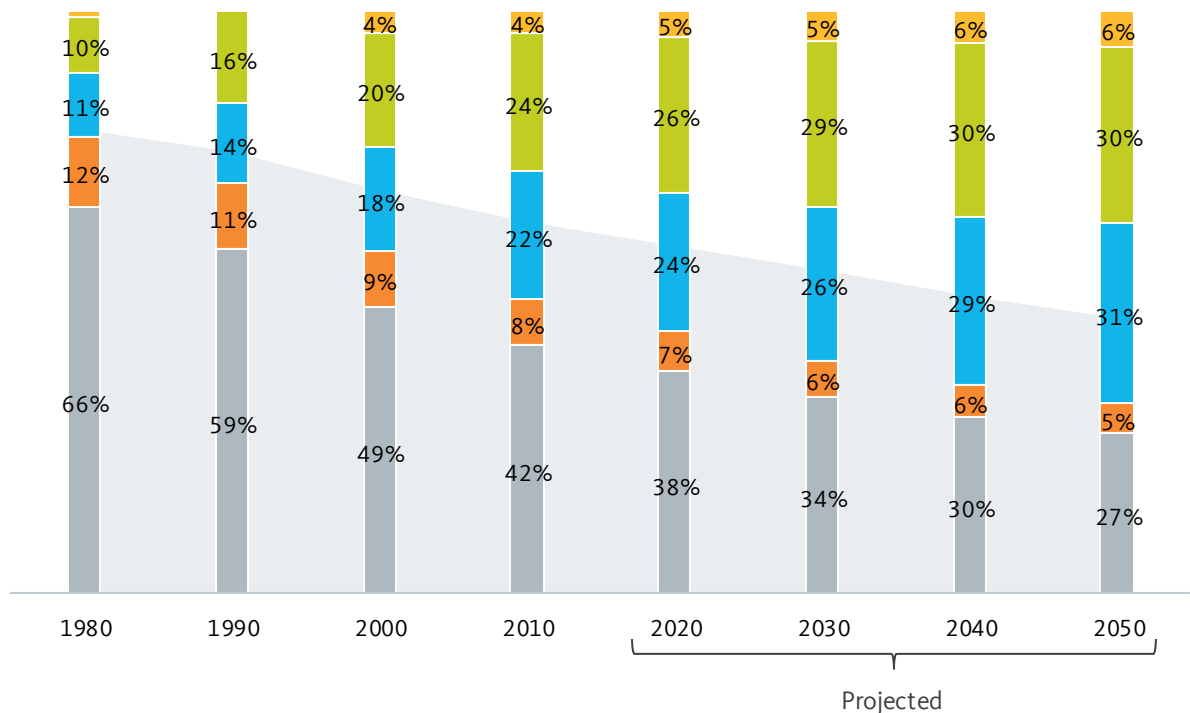
At the forefront of the nation’s demographic shift

The five-county Bay Area has long been more diverse than the nation as a whole. While the country is projected to become majority people of color by the year 2044, the Bay Area passed this milestone in the 2000s. By 2050, 72 percent of the region’s residents – predominantly Latinos and Asians or Pacific Islanders – are projected to be people of color. At the same time, the Black and White population shares are projected to decrease. The Black population is projected to make up just 5 percent of the population while the White population is projected to make up 27 percent of the population by 2050.

The share of people of color is projected to increase through 2050

Racial/Ethnic Composition, 1980 to 2050

- U.S. % White
- Mixed/other
- Native American
- Asian or Pacific Islander
- Latino
- Black
- White



Sources: U.S. Census Bureau; Woods & Poole Economics, Inc.

Note: Much of the increase in the Mixed/other population between 1990 and 2000 is due to a change in the survey question on race. Figures may not sum to total due to rounding.

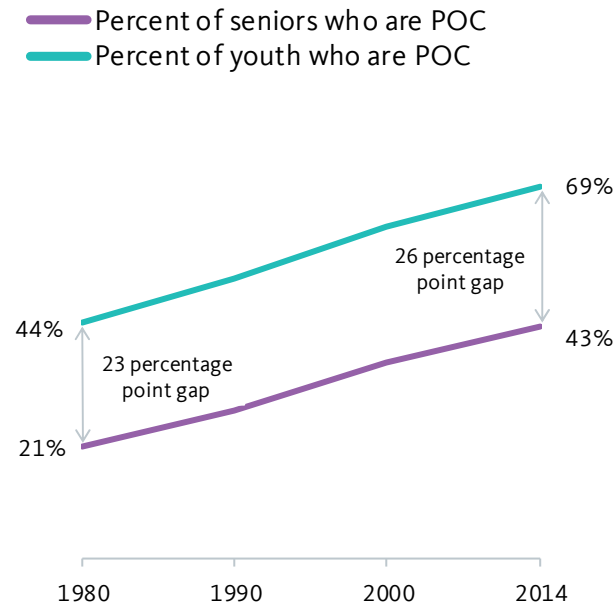
Demographics

A growing racial generation gap

Youth are leading the demographic shift occurring in the region. Today, 69 percent of the Bay Area’s youth (under age 18) are people of color, compared with 43 percent of the region’s seniors (over age 64). This 26 percentage point difference between the share of people of color among young and old can be measured as the racial generation gap, and has grown slightly since 1980.

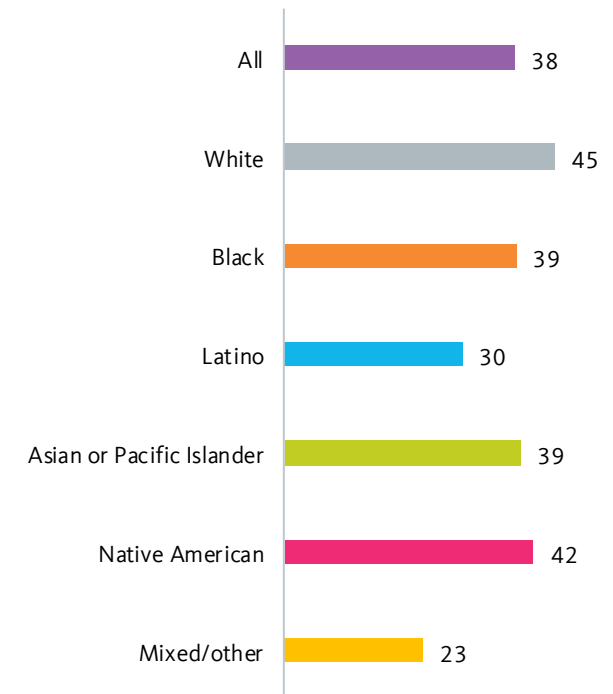
Examining median age by race/ethnicity reveals how the region’s fast-growing Latino population is more youthful than its White population. The median age of the Latino population is 30, which is 15 years younger than the median age of the White population. The population of mixed/other races has the lowest median age at just 23 years old.

The racial generation gap between youth and seniors has grown slightly since 1980
Racial Generation Gap: Percent People of Color (POC) by Age Group, 1980 to 2014



Source: U.S. Census Bureau.
 Note: Data for 2014 represent a 2010 through 2014 average.

People of mixed/other races and Latinos are much younger than other groups
Median Age by Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series.
 Note: Data represent a 2010 through 2014 average.

Demographics

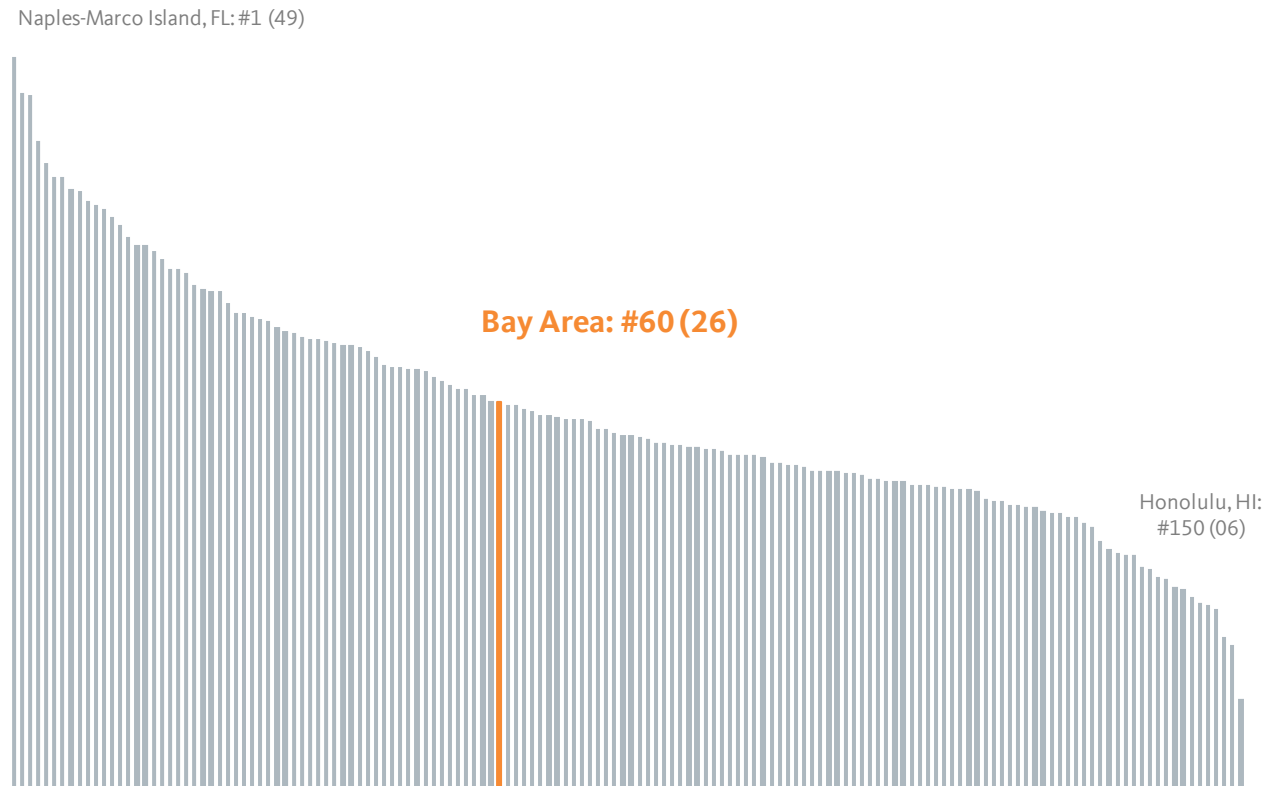
A growing racial generation gap

(continued)

The five-county San Francisco Bay Area's 26 percentage point racial generation gap is the same as the national average, ranking the region 60th among the largest 150 metro areas on this measure.

The Bay Area ranks near the middle of the largest 150 metros on the racial generation gap

The Racial Generation Gap in 2014: Largest 150 Metros Ranked



Source: U.S. Census Bureau.
Note: Data represent a 2010 through 2014 average.

Economic vitality



Economic vitality

Highlights

How is the region doing on measures of economic growth and well-being?

- The Bay Area's economy has shown consistent growth over the past few decades, but job growth is not keeping pace with growth in economic output, and job growth per person has been slower than the national average since the early 1990s.
- Income inequality has sharply increased in the region. Since 1979, the highest paid workers have seen their wages increase significantly, while wages for the lowest paid workers have declined.
- Since 1990, poverty and working-poverty rates in the region have been consistently lower than the national averages. However, people of color are more likely to be in poverty or working poor than Whites.
- Although education is a leveler, racial and gender gaps persist in the labor market. At nearly every level of educational attainment, people of color have worse outcomes than Whites. Women of color earn less than their counterparts at every level of educational attainment.

Decline in wages for workers at the 10th percentile since 1979:

-10%

Wage gap between college-educated White and Latino workers:

\$12/hr

Income inequality rank (out of largest 150 regions)

#14

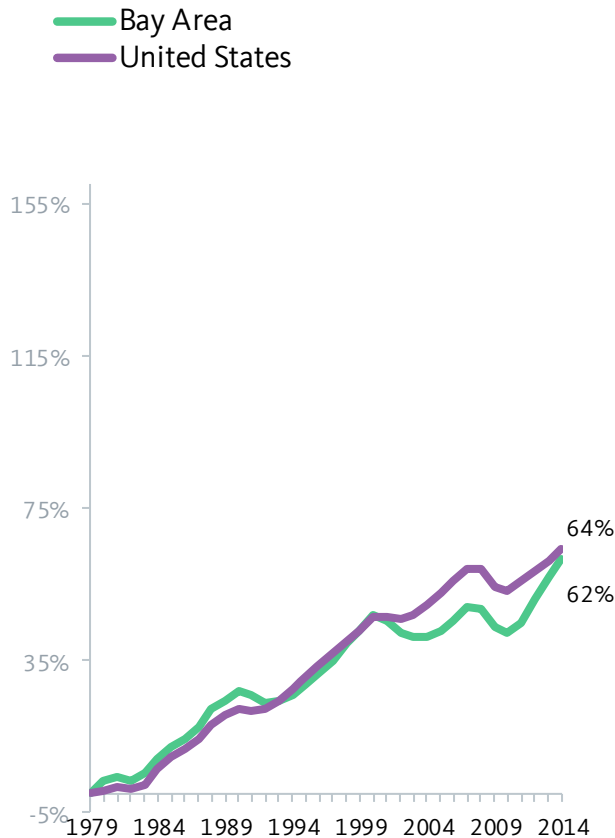
Economic vitality

Strong long-term economic growth

Economic growth – as measured by increases in jobs and gross regional product (GRP), the value of all goods and services produced within the region – has been consistently strong in the Bay Area over the past several decades. After the downturn in the late 1990s, the region fell behind the national average in job growth, but the gap has been narrowing since 2012. GRP growth, on the other hand, has consistently remained above the national average. By 2014, cumulative growth in GRP was 151 percent in the Bay Area compared with 106 percent in the country overall.

Job growth has fallen behind the national average since the late 1990s

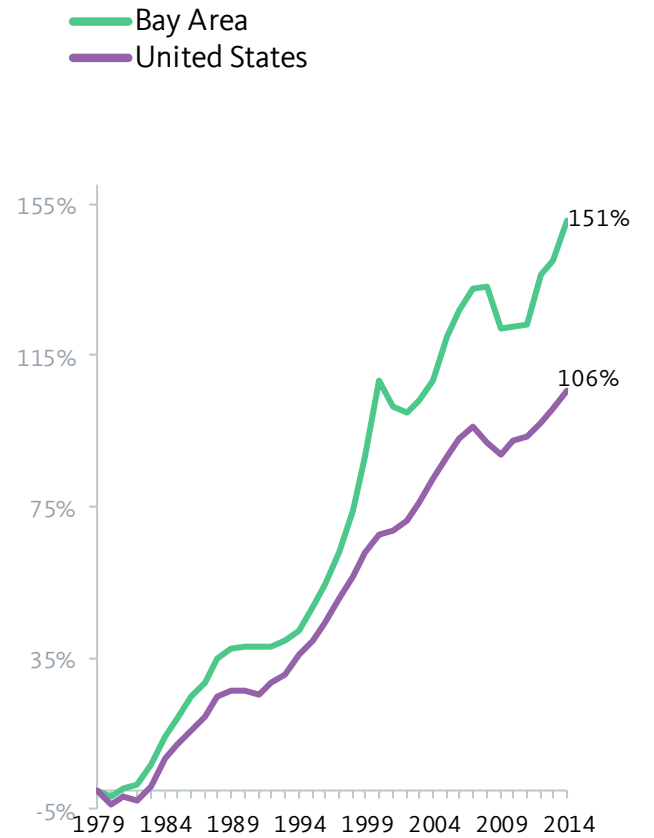
Cumulative Job Growth, 1979 to 2014



Source: U.S. Bureau of Economic Analysis.

Gross regional product (GRP) growth has consistently outpaced the nation

Cumulative Growth in Real GRP, 1979 to 2014



Source: U.S. Bureau of Economic Analysis.

Economic vitality

Economic resilience through the downturn

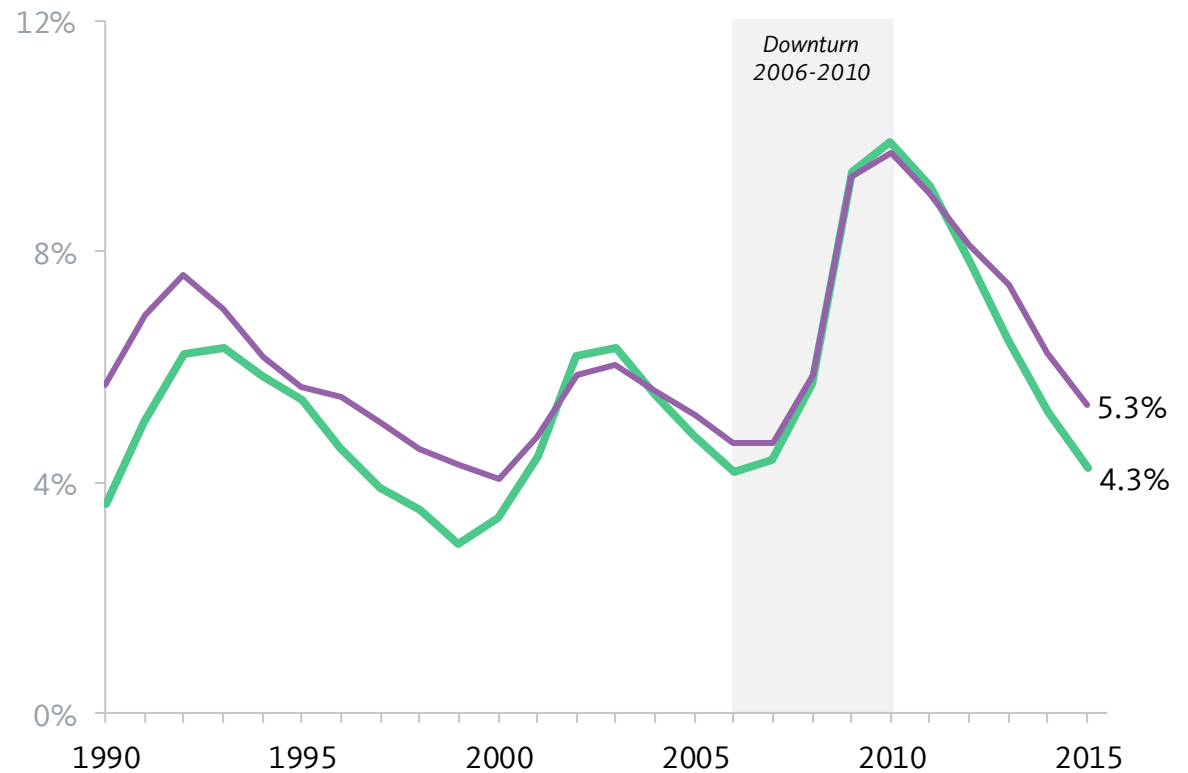
The Bay Area's economy was affected by the economic downturn in ways similar to the nation as a whole. During the 2006 to 2010 economic downturn, unemployment sharply increased, putting the rate at the national average.

Importantly, the unemployment rate decreased more rapidly in the Bay Area than in the nation. By 2015, unemployment was a full percentage point lower in the Bay Area than in the nation.

Unemployment is below the national average

Unemployment Rate, 1990 to 2015

- Bay Area
- United States



Source: U.S. Bureau of Labor Statistics. Universe includes the civilian non-institutional population ages 16 and older.

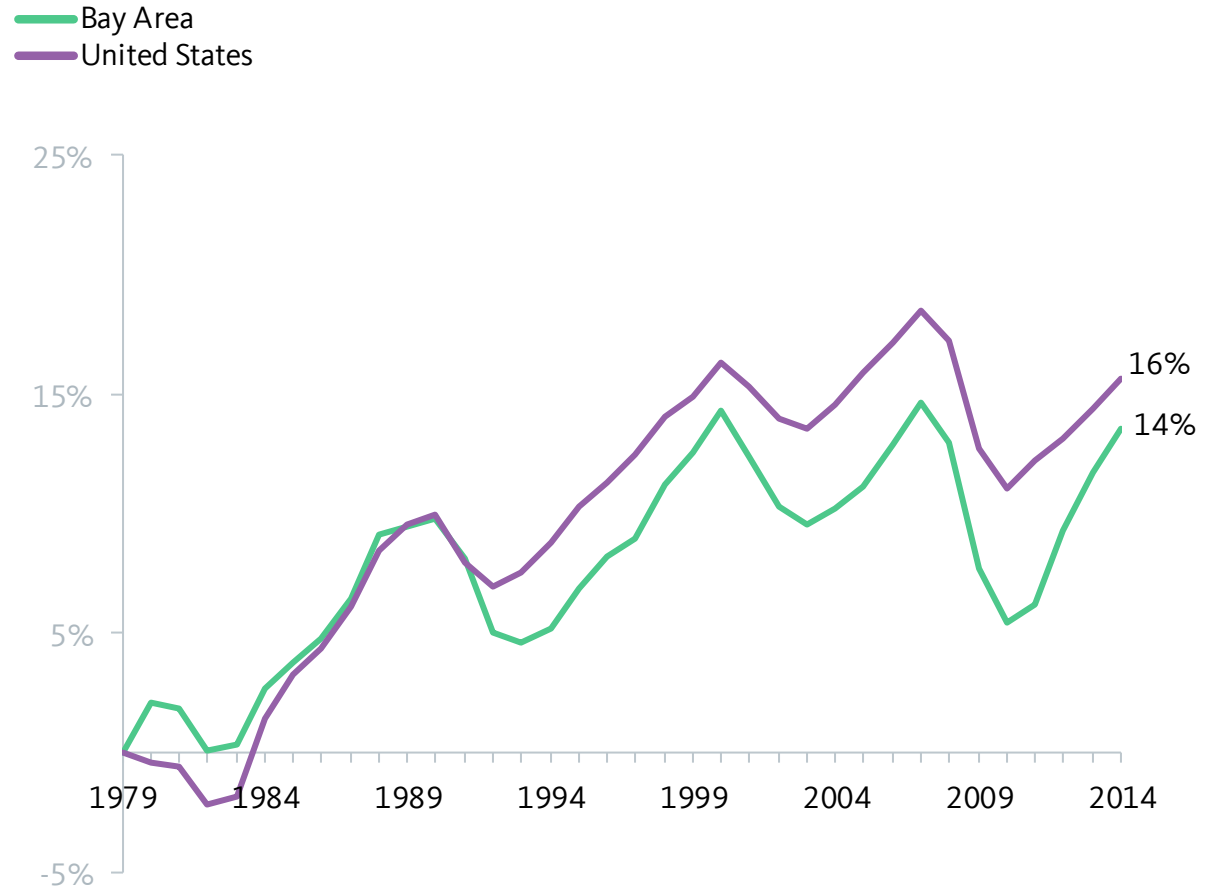
Economic vitality

Job growth is not keeping up with population growth

While overall job growth is essential, the real question is whether jobs are growing at a fast enough pace to keep up with population growth. Despite the region's continued job growth, job growth per person has been slower than the national average for the past few decades. The number of jobs per person has only increased by 14 percent since 1979, while it has increased by 16 percent for the nation overall. The jobs-to-population ratio was lowest in 2010 after declining throughout the recession, but it has since rebounded.

Job growth relative to population growth has been lower than the national average since 1989

Cumulative Growth in Jobs-to-Population Ratio, 1979 to 2014



Source: U.S. Bureau of Economic Analysis.

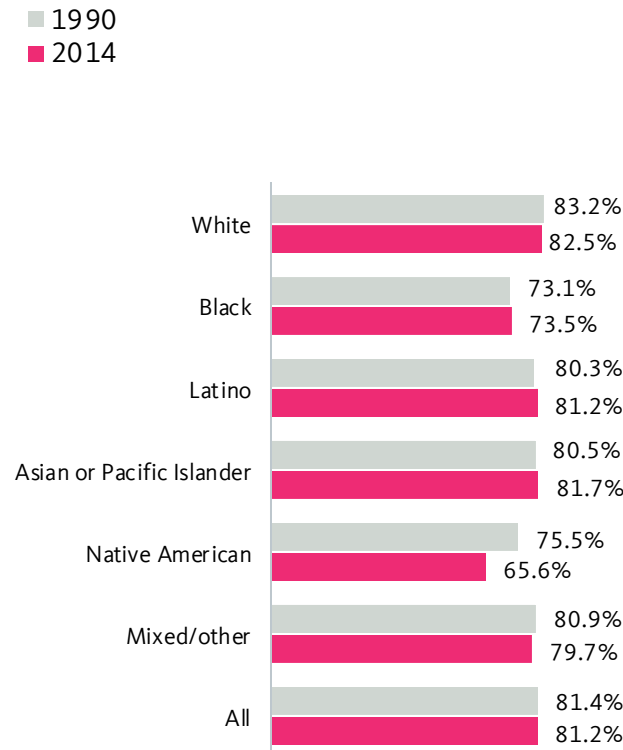
Economic vitality

Black and Native American residents face starkest labor market challenges

Another key question is who is getting the region’s jobs? Examining unemployment by race over the past two decades, we find that, despite some progress, racial employment gaps persist in the Bay Area. Despite comparable labor force participation rates (either working or actively seeking employment) to White residents, Latinos have slightly higher unemployment rates. High unemployment rates for Black and Native American residents suggest that the lower labor force participation rates are due to long-term unemployment. Black and Native American residents have at least double the unemployment rates of White residents.

African Americans and Native Americans participate in the labor market at lower rates

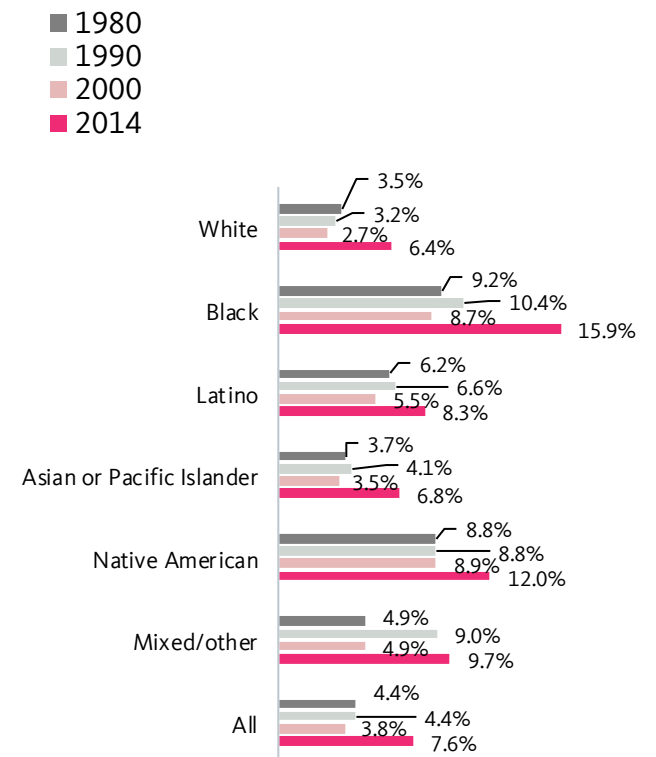
Labor Force Participation Rate by Race/Ethnicity, 1990 and 2014



Source: Integrated Public Use Microdata Series. Universe includes the civilian non-institutional population ages 25 through 64.
 Note: Data for 2014 represent a 2010 through 2014 average.

White residents in the labor force have the lowest unemployment rate

Unemployment Rate by Race/Ethnicity, 1990 to 2014



Source: Integrated Public Use Microdata Series. Universe includes the civilian non-institutional labor force ages 25 through 64.
 Note: Data for 2014 represent a 2010 through 2014 average.

Economic vitality

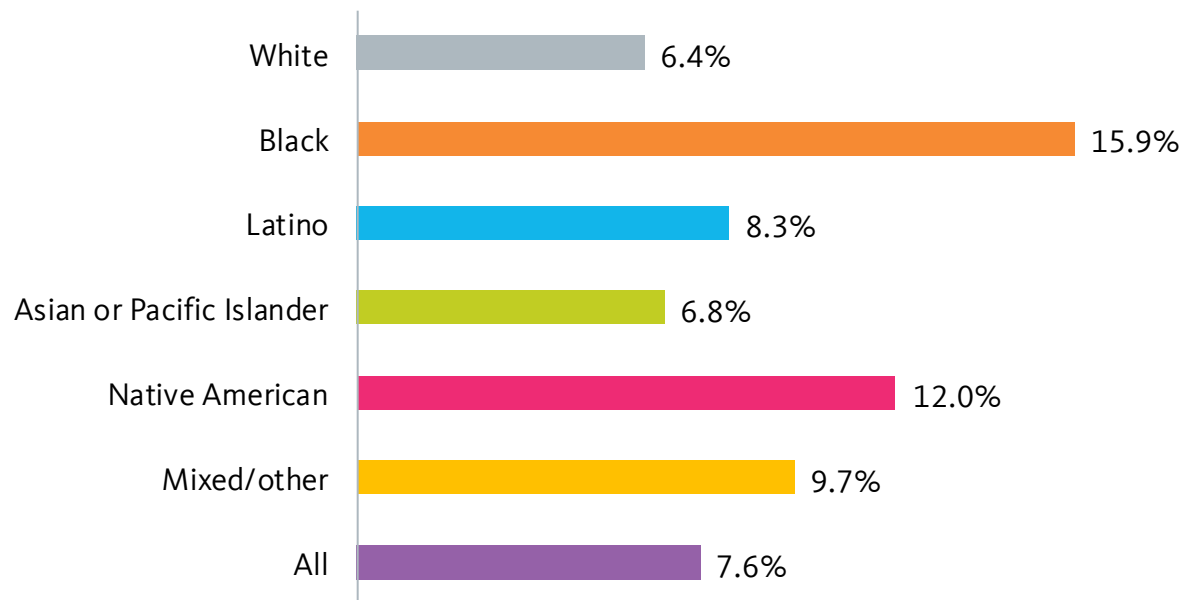
Black and Native American residents face starkest labor market challenges

(continued)

People of color are much more likely to be jobless than White residents. Black unemployment is more than double the rate of White unemployment, and Native American unemployment is nearly double the White unemployment rate. The unemployment rates for people of mixed/other races (9.7 percent) and Latinos (8.3 percent) are also high in the Bay Area.

Black residents have the highest unemployment rates in the region followed by Native Americans

Unemployment Rate by Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series. Universe includes the civilian non-institutional labor force ages 25 through 64.
 Note: Data represent a 2010 through 2014 average.

Economic vitality

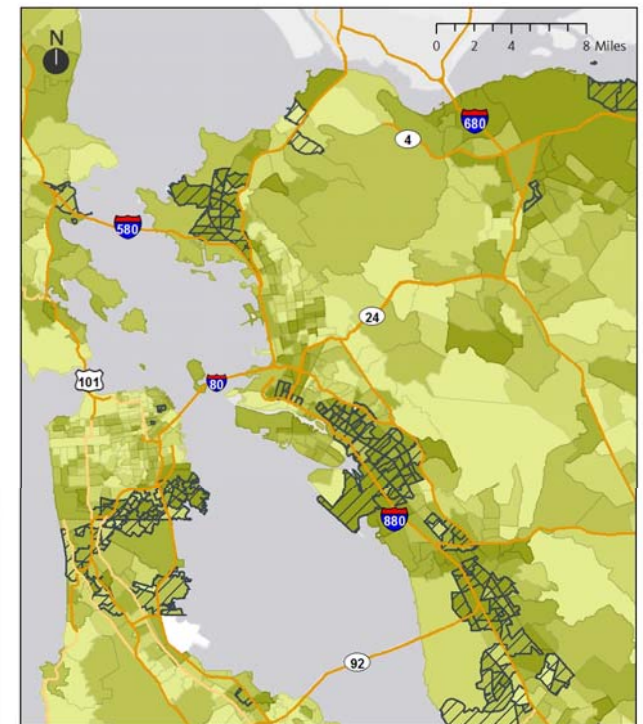
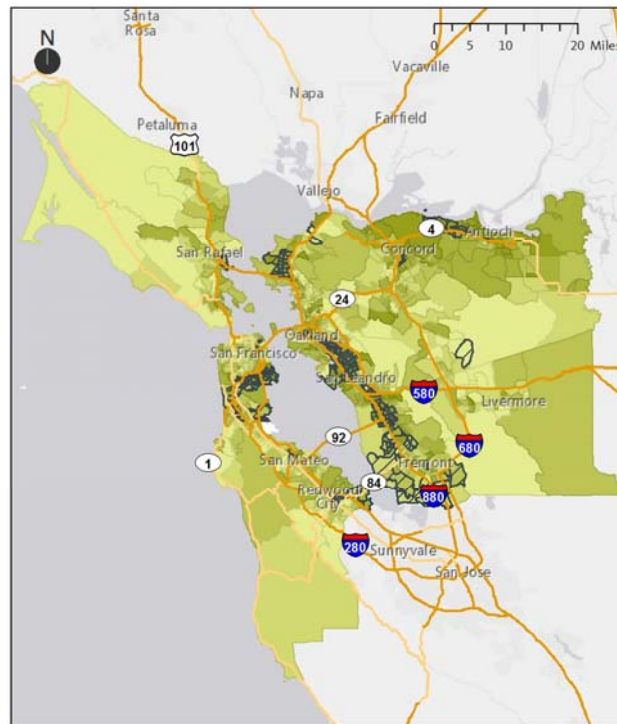
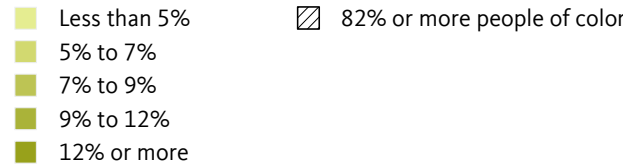
High unemployment in urban communities of color and in the outer suburbs

Knowing where high-unemployment neighborhoods are located in the region can help the region’s leaders develop targeted solutions.

As the maps to the right illustrate, concentrations of unemployment exist in pockets throughout the region, many of which are also high people-of-color communities. The darkest tracts, representing neighborhoods where unemployment is 12 percent or higher, are clustered in East Oakland, Richmond, and Bayview in San Francisco.

Clusters of unemployment can be found throughout the region and in communities of color

Unemployment Rate by Census Tract, 2014



Source: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes the civilian non-institutional population ages 16 and older. Note: Data represent a 2010 through 2014 average. Areas in white have missing data.

Economic vitality

Increasing income inequality

Income inequality has grown in the Bay Area over the past 30 years and surpassed the level of inequality in the nation overall by 1999. Inequality grew most rapidly in the region over the 1990s – increasing from 0.42 in 1989 to 0.47 in 1999.

Inequality here is measured by the Gini coefficient, which is the most commonly used measure of inequality. The Gini coefficient measures the extent to which the income distribution deviates from perfect equality, meaning that every household has the same income. The value of the Gini coefficient ranges from zero (perfect equality) to one (complete inequality, one household has all of the income).

Household income inequality has increased steadily since 1979

Gini Coefficient, 1979 to 2014

—■ Bay Area
—● United States



Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).
Note: Data for 2014 represent a 2010 through 2014 average.

Economic vitality

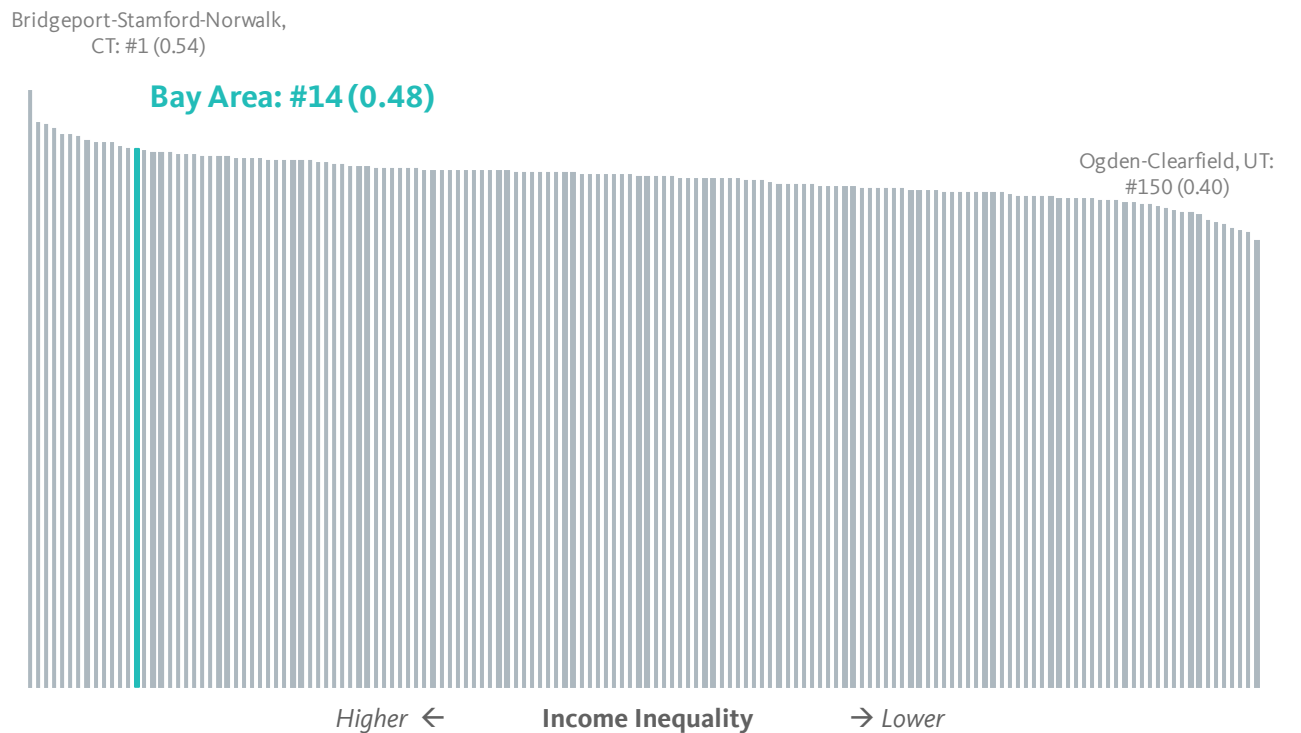
Increasing income inequality

(continued)

In 1979, the five-county San Francisco Bay Area ranked 45th out of the largest 150 regions in terms of income inequality. Today, it ranks 14th, leaving it between Trenton-Ewing, New Jersey (13th), and Port St. Lucie-Fort Pierce, Florida (15th). Compared with other similarly sized metros in the West, the level of inequality in the Bay Area is about the same as Los Angeles (0.49) and higher than San Diego (0.47) and San Jose (0.46).

The Bay Area's income inequality rank is 14th highest compared with other regions

The Gini Coefficient in 2014: Largest 150 Metros Ranked



Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).
Note: Data represent a 2010 through 2014 average.

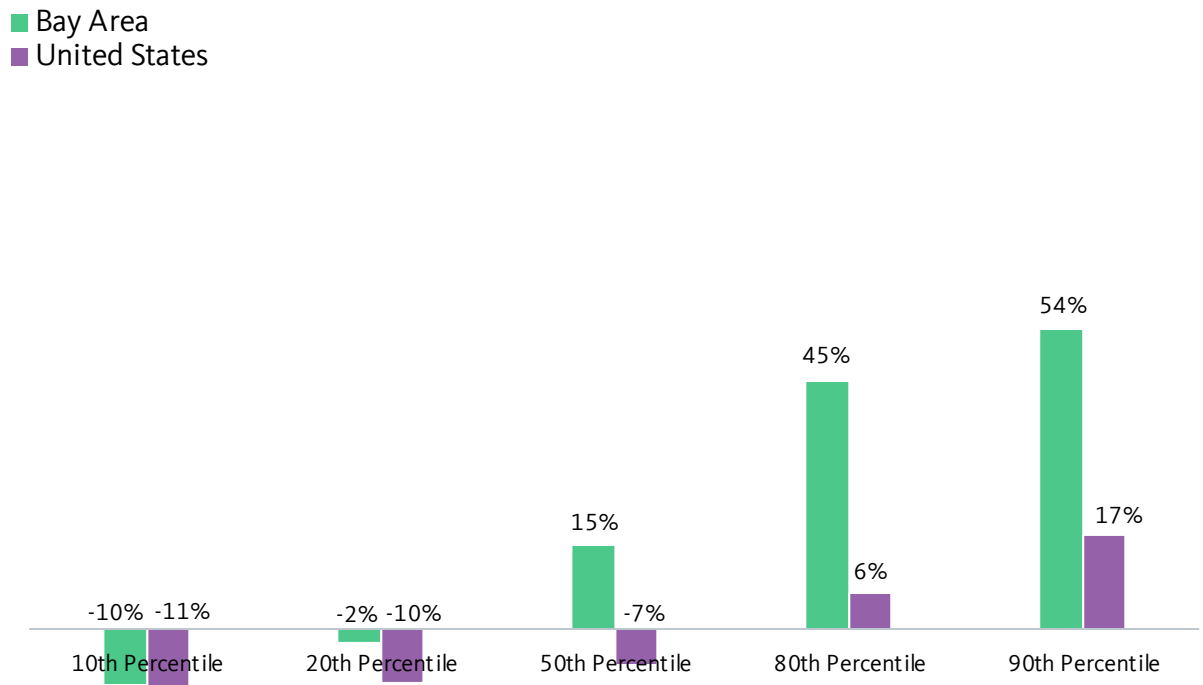
Economic vitality

Declining wages for low-wage workers

Wage gains at the top of the distribution play an important role in the region’s increasing inequality, alongside real wage declines at the bottom. After adjusting for inflation, growth in wages for middle earners, and top earners in particular, has been significantly higher in the Bay Area than for the nation overall. For the full-time worker at the 90th percentile, real earned income growth was 54 percent since 1979 in the Bay Area compared with a 17 percent increase at the national level.

And while wages at the bottom have not fallen quite as fast as they have nationwide, the end result is widened inequality between the top and the middle, as well as between the middle and the bottom of the wage distribution. The full-time Bay Area worker at the 10th percentile of the income distribution experienced a real decline in income of 10 percent while the worker at the 20th percentile experienced a 2 percent decline.

Wages grew only for middle- and high-wage workers and fell for low-wage workers
Real Earned Income Growth for Full-Time Wage and Salary Workers Ages 25-64, 1979 to 2014



Source: Integrated Public Use Microdata Series. Universe includes civilian non-institutional full-time wage and salary workers ages 25 through 64.
 Note: Data for 2014 represent a 2010 through 2014 average.

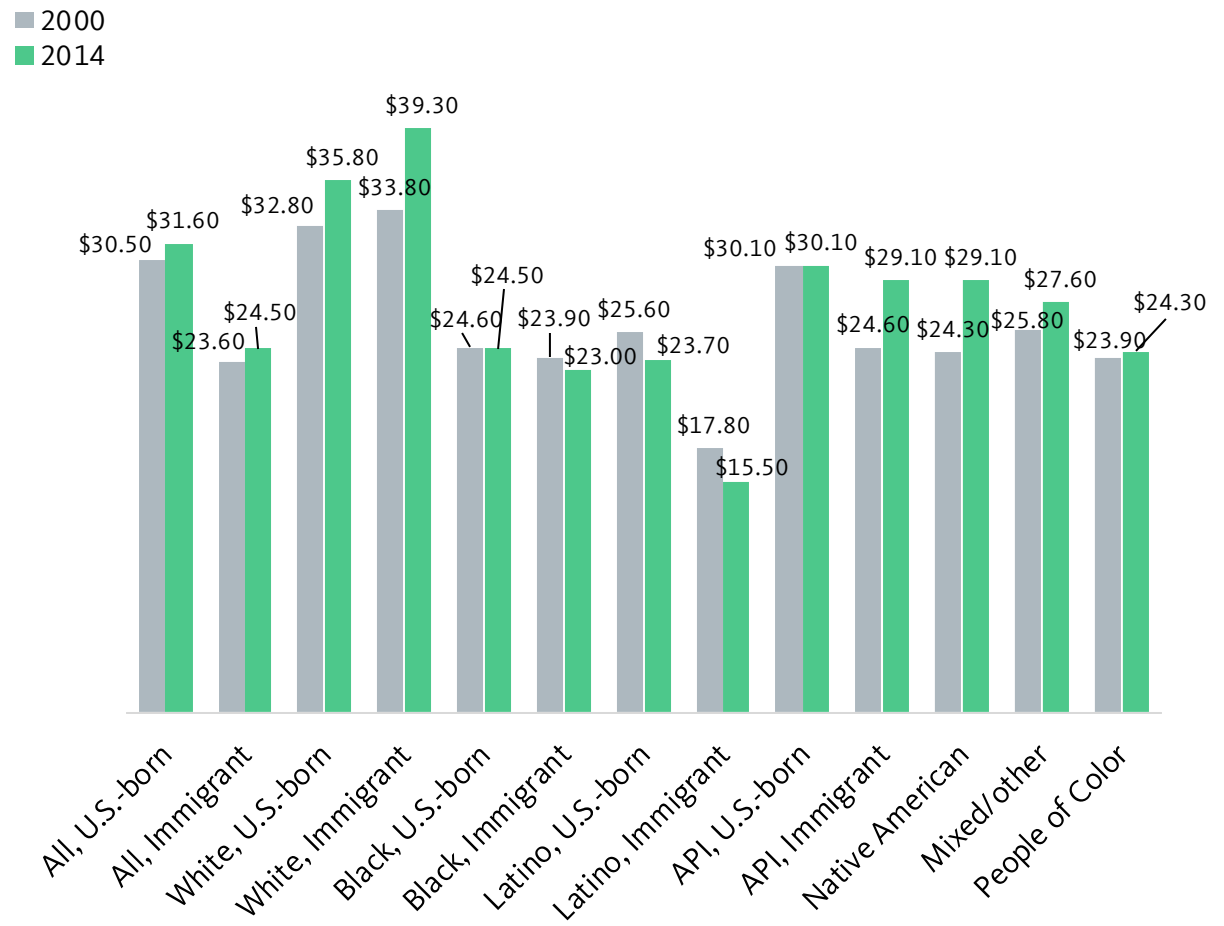
Economic vitality

Uneven wage growth by race/ethnicity

Wage growth has been uneven across racial/ethnic groups since 2000. Despite having the lowest median wage in 2000, Latino immigrants experienced the greatest decline in median hourly wages from 2000 to 2014. At the same time, median hourly wages have increased by nearly \$5/hour for Asian or Pacific Islander immigrant and Native American workers and by nearly \$6/hour for White immigrant workers.

Median hourly wages for Latino workers, especially Latino immigrant workers, have declined since 2000

Median Hourly Wage by Race/Ethnicity, 2000 and 2014



Source: Integrated Public Use Microdata Series. Universe includes civilian non-institutional full-time wage and salary workers ages 25 through 64. Note: Data for 2014 represent a 2010 through 2014 average. Values are in 2014 dollars.

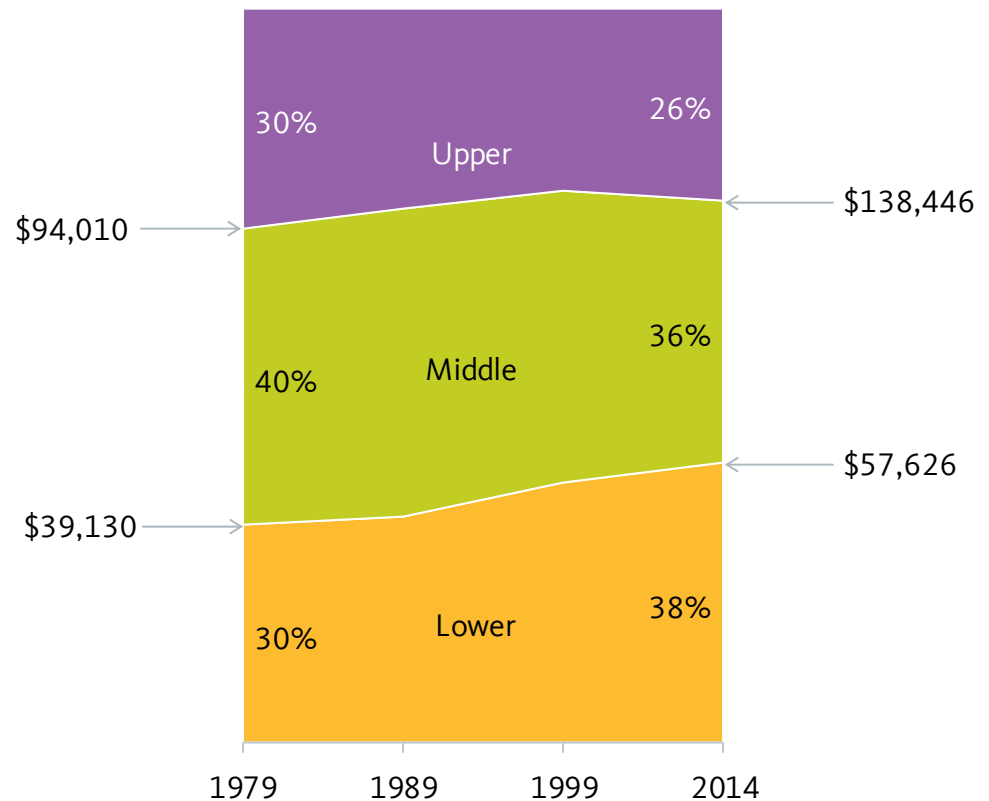
Economic vitality

A shrinking middle class

The Bay Area’s middle class is shrinking: since 1979, the share of households with middle-class incomes decreased from 40 to 36 percent. The share of upper-income households also declined, from 30 to 26 percent, while the share of lower-income households grew from 30 to 38 percent.

In this analysis, middle-income households are defined as having incomes in the middle 40 percent of household income distribution. In 1979, those household incomes ranged from \$39,130 to \$94,010. To assess change in the middle class and the other income ranges, we calculated what the income range would be today if incomes had increased at the same rate as average household income growth. Today’s middle-class incomes would be \$57,626 to \$138,446, and 36 percent of households fall in that income range.

The share of middle-class households declined since 1979
Household by Income Level, 1979 and 2014



Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).
 Note: Data for 2014 represent a 2010 through 2014 average. Dollar values are in 2014 dollars.

Economic vitality

Though the middle class is shrinking, it is representative

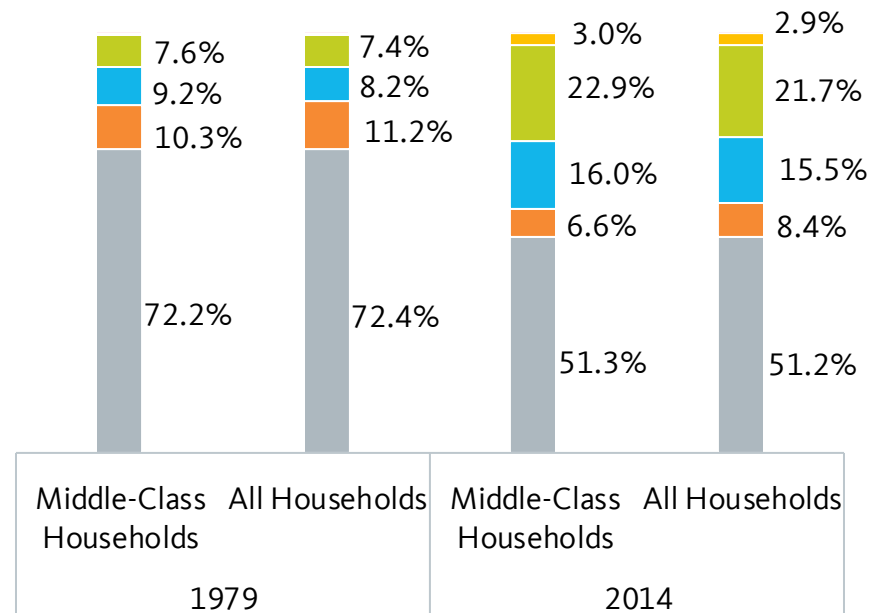
The demographics of the middle class reflect the region’s changing demographics. While the share of households with middle-class incomes has declined since 1979, middle-class households have become more racially and ethnically diverse as the population has become more diverse.

In 2014, 51.2 percent of all households were headed by White householders and 51.3 percent of middle-class households were headed by White householders. Asian or Pacific Islander households are slightly overrepresented in middle-class households while Black households are slightly underrepresented.

The middle class reflects the region’s racial/ethnic composition

Racial Composition of Middle-Class Households and All Households, 1979 and 2014

- Native American
- Mixed/other
- Asian
- Latino
- Black
- White



Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).
 Note: Data for 2014 represent a 2010 through 2014 average.

Economic vitality

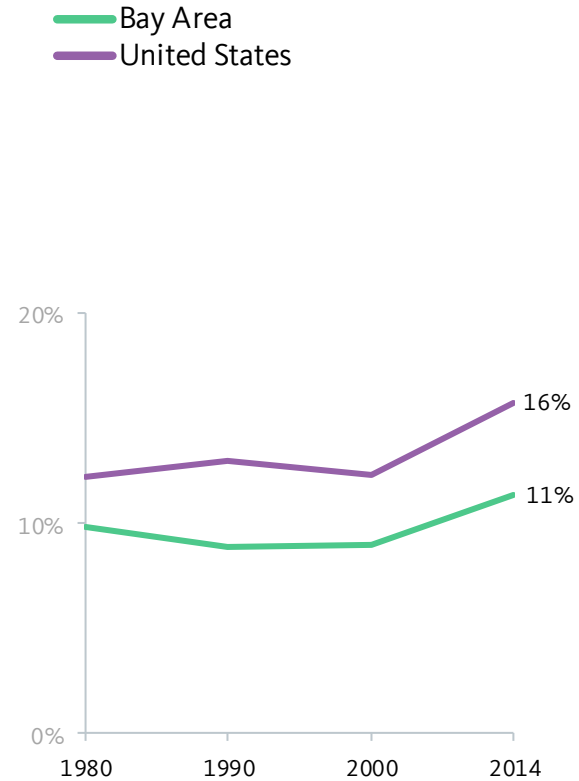
Comparatively low, but slowly rising poverty and working poor

Poverty rates have been fairly consistent in the Bay Area over the past 30 years, and have been much lower than the national average. Still, today, about one in every 10 Bay Area residents (11 percent) lives below the federal poverty level, which is just under \$24,000 a year for a family of four.

The share of the working poor, defined as working full time with an income below 200 percent of the poverty level, has also been consistently below average and has risen, though not dramatically. About 5 percent of the region's 25- to 64-year-olds are working poor, compared with 9 percent nationally. Importantly, cost of living in the Bay Area is much higher than the national average.

Poverty consistently lower than the national average

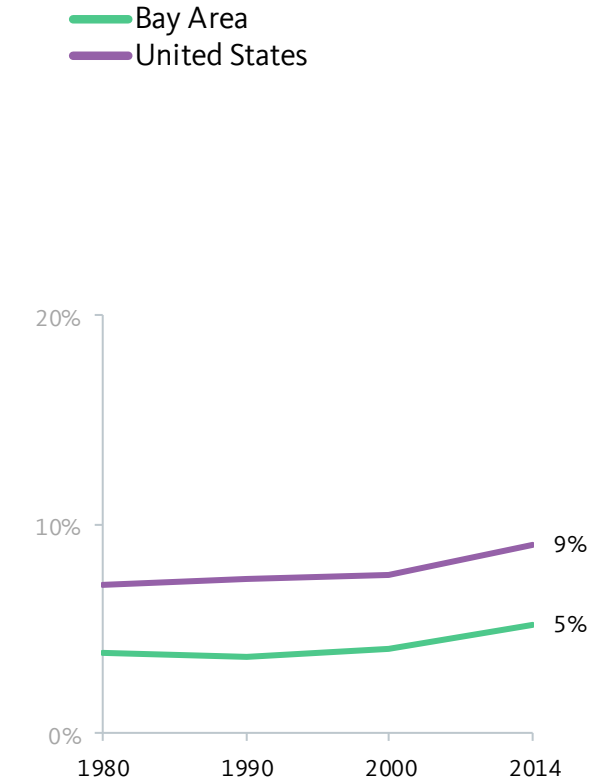
Poverty Rate, 1980 to 2014



Source: Integrated Public Use Microdata Series. Universe includes all persons not in group quarters. Note Data for 2014 represents a 2010 through 2014 average.

Working poverty also lower than national average

Working-Poverty Rate, 1980 to 2014



Source: Integrated Public Use Microdata Series. Universe includes the civilian non-institutional population ages 25 through 64 not in group quarters. Note: Data for 2014 represents a 2010 through 2014 average.

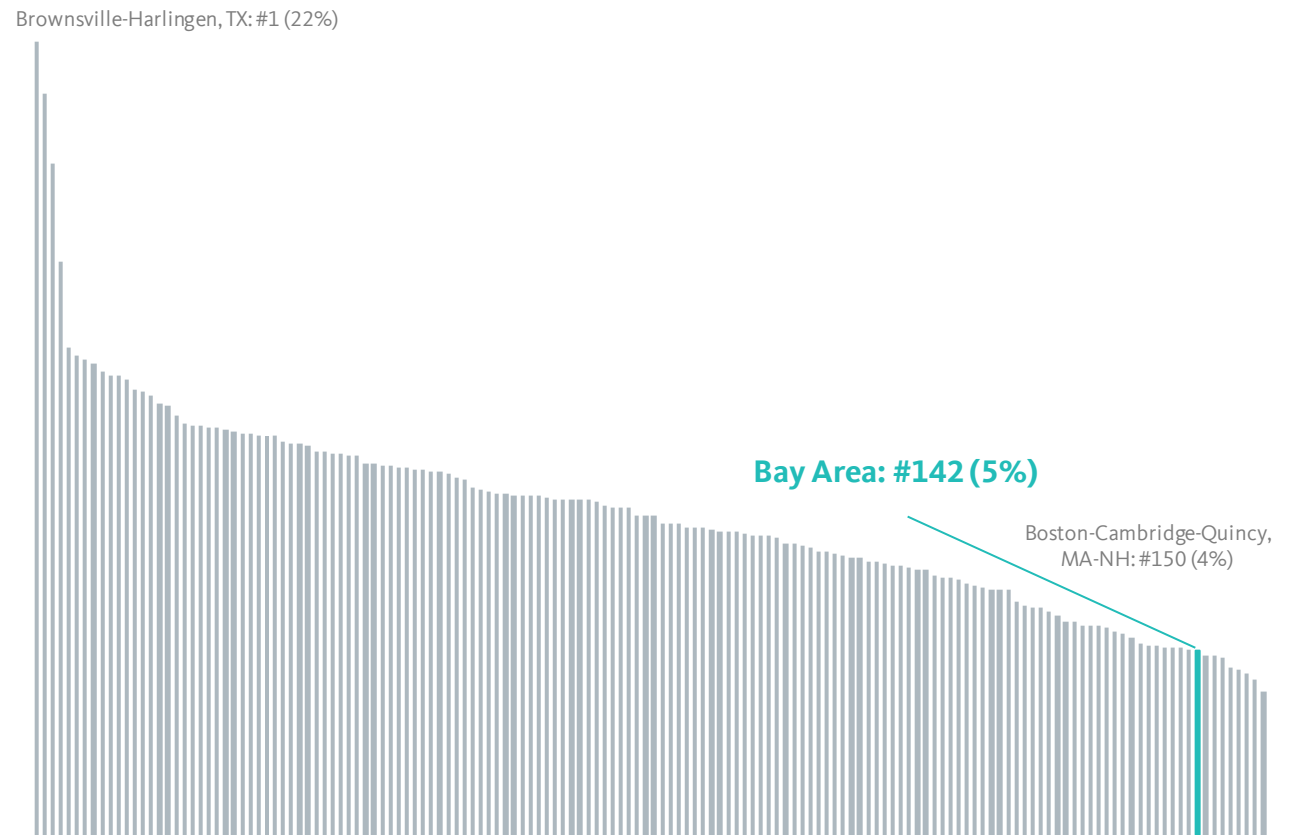
Economic vitality

Comparatively low, but slowly rising poverty and working poor

(continued)

The Bay Area ranks 142nd highest in terms of working poverty among the largest 150 metros. Compared to other similarly sized metros in the West, the working-poverty rate in the Bay Area is about the same as in San Jose (5 percent) and much lower than in Los Angeles (11 percent).

The Bay Area has the 142nd highest working-poverty rate
Working-Poverty Rate in 2014: Largest 150 Metros Ranked



Source: Integrated Public Use Microdata Series. Universe includes the civilian non-institutional population ages 25 through 64 not in group quarters.
Note: Data represent a 2010 through 2014 average.

Economic vitality

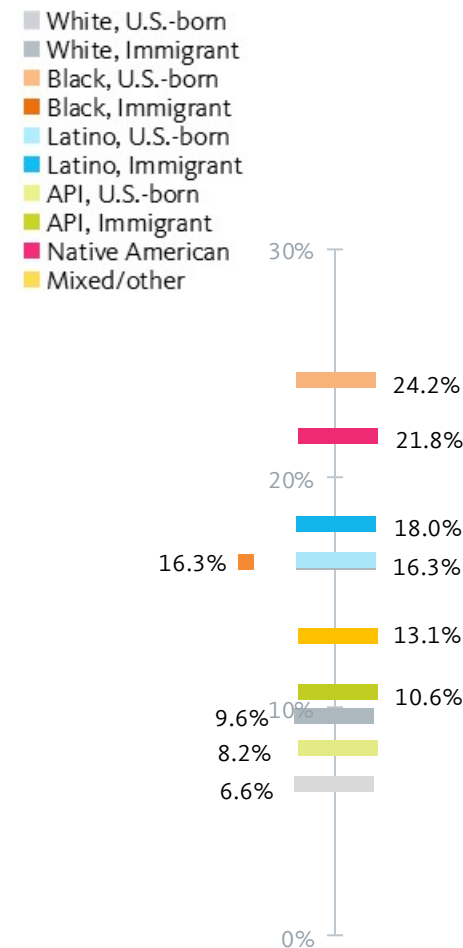
People of color are more likely to be in poverty and among the working poor

Despite low overall poverty rates, racial disparities exist. Nearly one in four U.S.-born Black residents and over one in five Native Americans in the Bay Area live below the poverty level – compared with one in 15 U.S.-born White residents. In other words, among the U.S. born, Black residents are nearly four times as likely as their White counterparts to be in poverty. Poverty is also higher for Latinos, people of mixed/other races, and Asians or Pacific Islanders compared with U.S.-born Whites.

Latino immigrants are by far the most likely to be working poor compared with all other groups, with a near 18 percent working poor rate compared with the 5 percent average for all residents (not shown). African Americans and Native Americans also have an above-average working poor rate. U.S.-born Whites have the lowest rate of working poverty, at just 2 percent.

Poverty is highest for Native Americans and African Americans

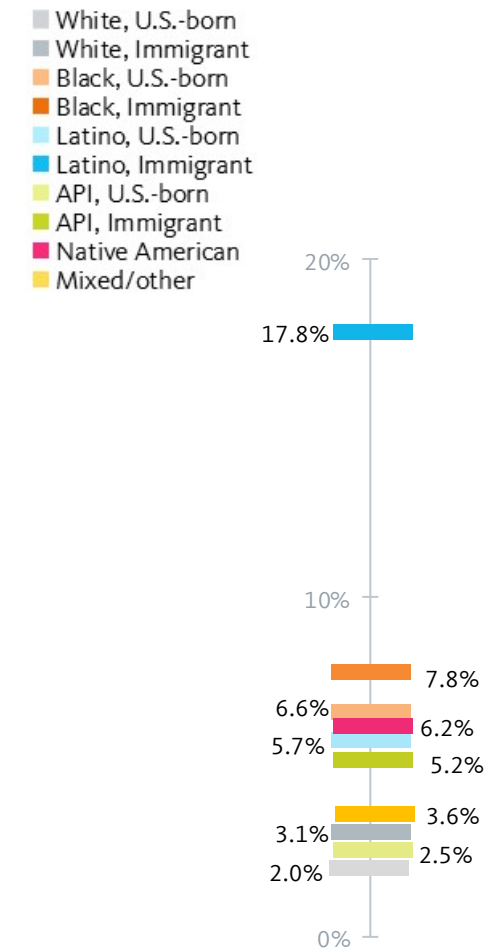
Poverty Rate by Race/Ethnicity and Nativity, 2014



Source: Integrated Public Use Microdata Series. Universe includes all persons not in group quarters.
 Note: Data represent a 2010 through 2014 average.

Latino immigrants have the highest working-poverty rate

Working-Poverty Rate by Race/Ethnicity and Nativity, 2014



Source: Integrated Public Use Microdata Series. Universe includes the civilian non-institutional population ages 25 through 64 not in group quarters.
 Note: Data represent a 2010 through 2014 average. Data for some racial/ethnic groups in some years are excluded due to small sample size.

Economic vitality

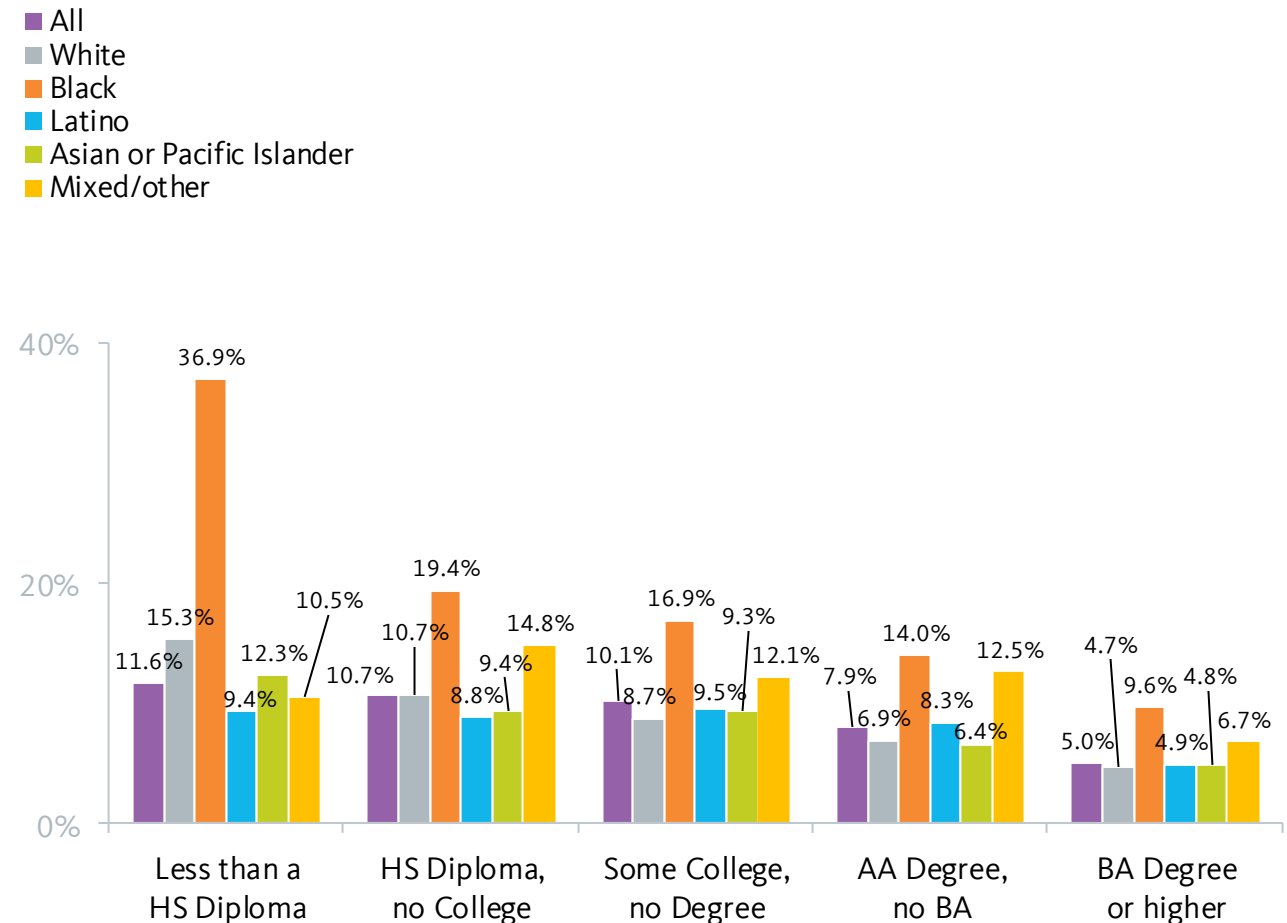
Black workers face highest unemployment at every education level

In general, unemployment decreases with higher educational attainment. But at all education levels, Black workers are the most likely to be unemployed. The unemployment rate for African Americans with less than a high school diploma is particularly high compared with other groups with the same level of education: 37 percent of Black residents without a high school diploma are unemployed compared with 15 percent of Whites and 9 percent of Latinos.

Even at the highest education levels, Black residents are twice as likely as White residents to be unemployed. Unemployment is also higher among the population of mixed/other races compared with overall unemployment across education levels.

People of color have higher unemployment than Whites at nearly every education level

Unemployment Rate by Educational Attainment and Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series. Universe includes the civilian non-institutional labor force ages 25 through 64. Note: Data represent a 2010 through 2014 average. Data for some racial/ethnic groups are excluded due to small sample size.

Economic vitality

Workers of color earn less than White workers at all educational levels

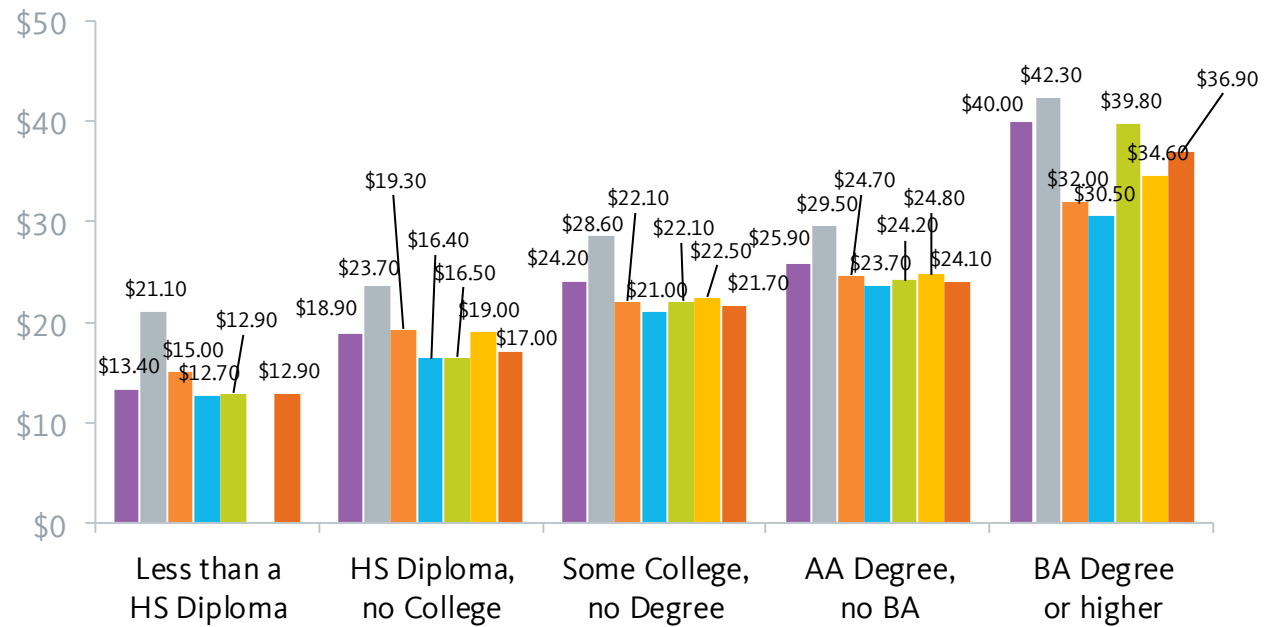
Wages rise as education levels increase but racial gaps persist. At every level of education, Latino workers have the lowest median wage. The White-Latino wage gaps are the largest at the lower and higher ends of the education distribution: White workers without a high school diploma have a median wage that is \$8/hour higher than Latino workers with the same level of education. Among the workers with a bachelor’s degree or higher, White workers have a median wage that is \$12/hour higher than Latino workers.

Asian or Pacific Islander workers with a high school diploma or less have median wages comparable to Latino workers while Asian or Pacific Islander workers with a bachelor’s degree or higher have the highest median wage among workers of color.

Latino workers have the lowest median wage at nearly every education level

Median Hourly Wage by Educational Attainment and Race/Ethnicity, 2014

- All
- White
- Black
- Latino
- Asian or Pacific Islander
- Mixed/other
- People of Color



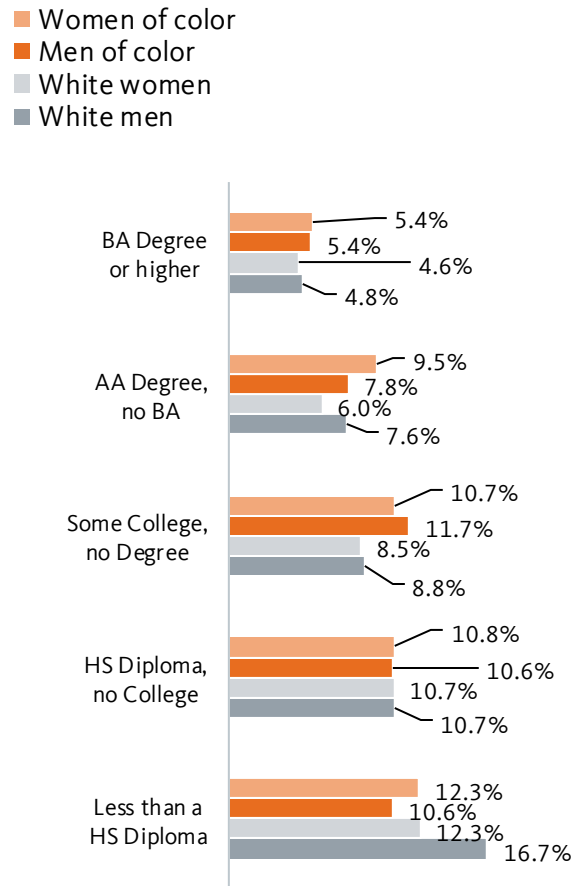
Source: Integrated Public Use Microdata Series. Universe includes civilian non-institutional full-time wage and salary workers ages 25 through 64. Note: Data represent a 2010 through 2014 average. Data for some racial/ethnic groups are excluded due to small sample size. Values are in 2014 dollars.

Economic vitality

There is also a gender gap in work and pay

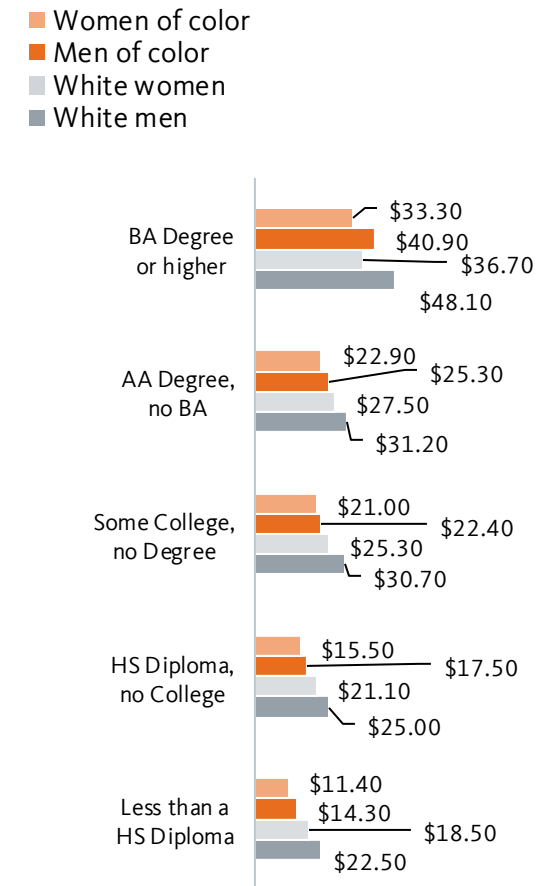
While men and women of color with higher education levels have higher unemployment rates than White men and women, women and men of color have lower unemployment rates at lower levels of education. Still, women of color across the board have the lowest median hourly wages. College-educated women of color with a bachelor's degree or higher have a median wage that is \$15 an hour less than their White male counterparts.

Unemployment is higher for women and men of color than White women and men at higher education levels
Unemployment Rate by Educational Attainment, Race/Ethnicity, and Gender, 2014



Source: Integrated Public Use Microdata Series. Universe includes the civilian non-institutional labor force ages 25 through 64. Note: Data represent a 2010 through 2014 average.

Women of color earn less than their male counterparts at every education level
Median Hourly Wage by Educational Attainment, Race/Ethnicity, and Gender, 2014



Source: Integrated Public Use Microdata Series. Universe includes civilian non-institutional full-time wage and salary workers ages 25 through 64. Note: Data represent a 2010 through 2014 average. Values are in 2014 dollars.

Economic vitality

The region's middle-wage job growth is the weakest

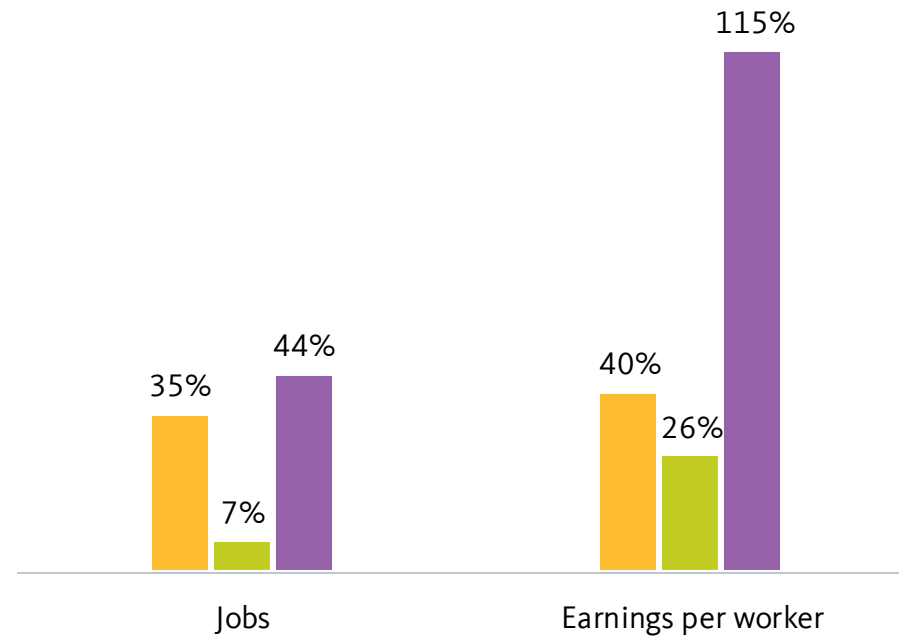
Following the national trend, over the past two decades, job growth in the Bay Area has been concentrated in high-wage and low-wage jobs. Middle-wage jobs have increased in the region in the past two decades, but at a much slower pace than those on the upper and lower end.

Wage growth for high-wage workers was nearly three times that of low-wage workers. Importantly, earnings per worker increased by 40 percent among low-wage industries.

High-wage jobs are growing fastest and they had the most earnings growth

Growth in Jobs and Earnings by Industry Wage Level, 1990 to 2015

- Low-wage
- Middle-wage
- High-wage



Sources: U.S. Bureau of Labor Statistics; Woods & Poole Economics, Inc. Universe includes all private sector jobs covered by the federal Unemployment Insurance (UI) program

Economic vitality

Wage growth fast at the top, slow in the middle and bottom

The region’s high-wage industries have fared well over the past two decades. Those working in information, finance and insurance, and management of companies and enterprises have seen their incomes more than double. Workers in some middle-wage industries, such as those in manufacturing, real estate and rental and leasing, and wholesale trade, have also seen strong wage growth. Earnings have also increased among low-wage industries like administrative and support and waste management and remediation services.

A widening wage gap by industry sector
Industries by Wage-Level Category in 1990 and 2015

Wage Category		Industry	Average Annual Earnings 1990	Average Annual Earnings 2015	Percent Change in Earnings 1990-2015	Share of Jobs 2015
High	Mining		\$110,743	\$123,159	11%	26%
	Utilities		\$88,421	\$150,564	70%	
	Professional, Scientific, and Technical Services		\$74,376	\$137,187	84%	
	Management of Companies and Enterprises		\$73,591	\$167,994	128%	
	Finance and Insurance		\$70,325	\$175,962	150%	
	Information		\$66,913	\$187,433	180%	
Middle	Wholesale Trade		\$63,640	\$90,135	42%	47%
	Construction		\$62,411	\$76,345	22%	
	Transportation and Warehousing		\$61,147	\$64,749	6%	
	Manufacturing		\$60,385	\$101,912	69%	
	Real Estate and Rental and Leasing		\$49,830	\$76,528	54%	
	Health Care and Social Assistance		\$48,637	\$57,843	19%	
	Retail Trade		\$37,540	\$40,168	7%	
Low	Arts, Entertainment, and Recreation		\$35,676	\$51,345	44%	27%
	Administrative and Support and Waste Management and Remediation Services		\$33,186	\$56,149	69%	
	Other Services (except Public Administration)		\$32,422	\$43,739	35%	
	Agriculture, Forestry, Fishing and Hunting		\$31,333	\$35,316	13%	
	Education Services		\$30,761	\$46,448	51%	
	Accommodation and Food Services		\$21,639	\$26,865	24%	

Source: U.S. Bureau of Labor Statistics; Woods & Poole Economics, Inc. Universe includes all private sector jobs covered by the federal Unemployment Insurance (UI) program. Note: Dollar values are in 2015 dollars.

Economic vitality

Professional and business services and education service, health care, and social assistance projected to grow most

By 2024, professional and business services will add over 80,000 jobs and education services, health care, and social assistance will add another 75,000 jobs

Industry Employment Projections, 2014 to 2024

Industry	Estimated Employment 2014	Projected Employment 2024	Numeric Change 2014-2024	Annual Average Percent Change	Total Percent Change
Professional and Business Services	440,900	523,900	83,000	1.7%	19%
Educational Service, Health Care, and Social Assistance	318,800	394,200	75,400	2.1%	24%
Leisure and Hospitality	248,300	297,600	49,300	1.8%	20%
Construction	100,800	124,400	23,600	2.1%	23%
Self Employment	153,000	171,400	18,400	1.1%	12%
Information	78,500	91,600	13,100	1.6%	17%
Trade, Transportation, Warehousing, and Utilities	354,900	366,300	11,400	0.3%	3%
Manufacturing	121,900	129,200	7,300	0.6%	6%
Other Services (excludes 814-Private Household Workers)	82,300	86,100	3,800	0.5%	5%
Financial Activities	126,900	127,500	600	0.0%	0%
Mining and Logging	900	1,300	400	3.7%	44%
Government	302,600	302,800	200	0.0%	0%
Total Farm	3,600	3,600	0	0.0%	0%
Private Household Workers	7,800	7,100	-700	-0.9%	-9%
Total Employment	2,341,000	2,627,000	286,000	1.2%	12%

Economic vitality

Food service and computer and mathematical occupations will see the fastest growth

Food preparation and serving related occupations are projected to add nearly 43,000 jobs by 2024 while computer and mathematical occupations add another 32,000 jobs

Occupations Employment Projections, 2014 to 2024

Occupation	Estimated Employment 2014	Projected Employment 2024	Numeric Change 2014-2024	Annual Average Percent Change	Total Percent Change
Food Preparation and Serving Related Occupations	195,360	238,050	42,690	2.0%	22%
Computer and Mathematical Occupations	119,250	151,470	32,220	2.4%	27%
Business and Financial Operations Occupations	168,990	196,150	27,160	1.5%	16%
Management Occupations	181,000	205,480	24,480	1.3%	14%
Personal Care and Service Occupations	131,240	155,570	24,330	1.7%	19%
Construction and Extraction Occupations	99,640	121,830	22,190	2.0%	22%
Healthcare Practitioners and Technical Occupations	99,260	115,450	16,190	1.5%	16%
Education, Training, and Library Occupations	125,110	137,410	12,300	0.9%	10%
Life, Physical, and Social Science Occupations	43,540	54,340	10,800	2.2%	25%
Transportation and Material Moving Occupations	121,990	131,930	9,940	0.8%	8%
Healthcare Support Occupations	46,840	56,370	9,530	1.9%	20%
Office and Administrative Support Occupations	332,760	341,190	8,430	0.3%	3%
Sales and Related Occupations	223,630	231,050	7,420	0.3%	3%
Building and Grounds Cleaning and Maintenance Occupations	84,500	91,650	7,150	0.8%	8%
Arts, Design, Entertainment, Sports, and Media Occupations	56,430	63,480	7,050	1.2%	12%
Architecture and Engineering Occupations	51,730	57,690	5,960	1.1%	12%
Community and Social Service Occupations	35,660	40,430	4,770	1.3%	13%
Protective Service Occupations	45,560	50,250	4,690	1.0%	10%
Installation, Maintenance, and Repair Occupations	62,440	66,330	3,890	0.6%	6%
Production Occupations	84,000	87,570	3,570	0.4%	4%
Legal Occupations	28,760	30,800	2,040	0.7%	7%
Farming, Fishing, and Forestry Occupations	3,000	2,820	-180	-0.6%	-6%
Total, All Occupations	2,341,000	2,627,000	286,000	1.2%	12%

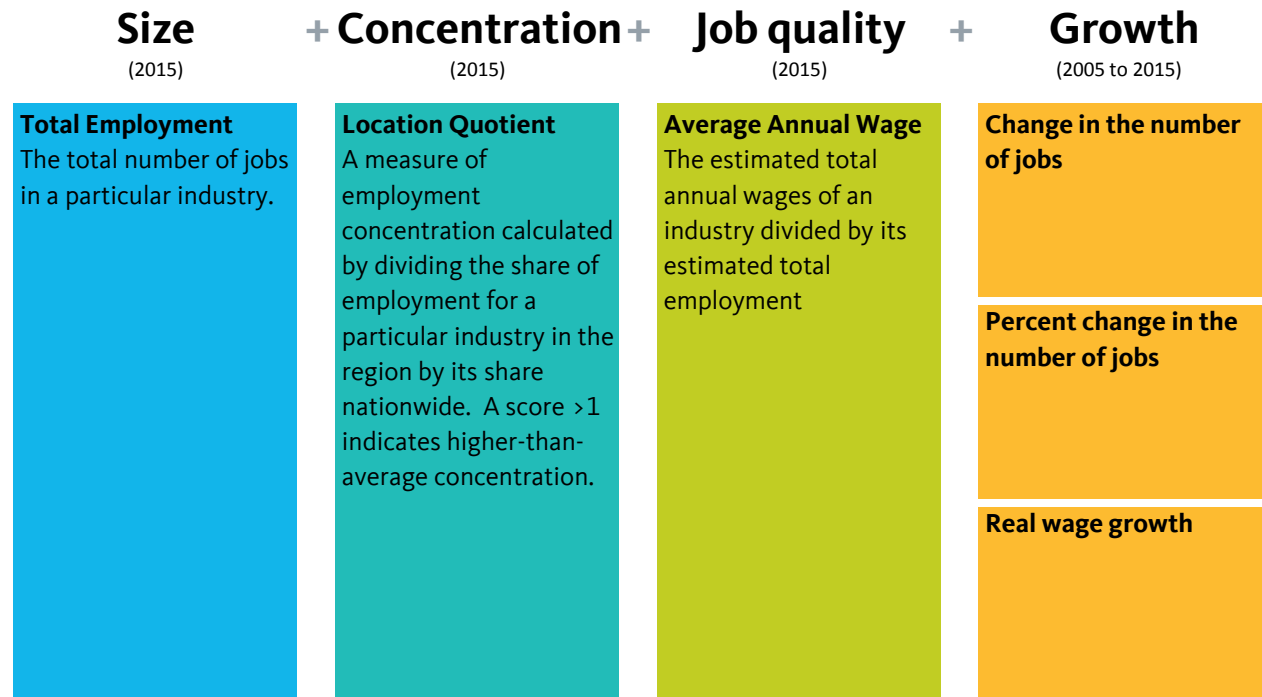
Source: State of California Employment Development Department, Labor Market Information Division. Figures may not sum to total due to rounding and/or issues relating to the projection methodology.

Economic vitality

Identifying the region’s strong industries

Understanding which industries are strong and competitive in the region is critical for developing effective strategies to attract and grow businesses. To identify strong industries in the region, 19 industry sectors were categorized according to an “**industry strength index**” that measures four characteristics: size, concentration, job quality, and growth. Each characteristic was given an equal weight (25 percent each) in determining the index value. “Growth” was an average of three indicators of growth (change in the number of jobs, percent change in the number of jobs, and wage growth). These characteristics were examined over the last decade to provide a current picture of how the region’s economy is changing.

Industry strength index =



Note: This industry strength index is only meant to provide general guidance on the strength of various industries in the region, and its interpretation should be informed by an examination of individual metrics used in its calculation, which are presented in the table on the next page. Each indicator was normalized as a cross-industry z-score before taking a weighted average to derive the index.

Economic vitality

Professional services, information, and management of companies and enterprises dominate

According to the industry strength index, the region’s strongest industries are professional, scientific, and technical services; information; and management of companies and enterprises. Professional services ranks first because of its high concentration of jobs in the region, high and growing wages, and a large and growing

employment base. Health care and social assistance was the largest industry in terms of employment in 2015 and saw the largest increase in employment from 2005 to 2015, but a relatively low average annual wage and declining real wages push this industry to fourth on the index.

Professional, scientific, and technical services, information, and management of companies and enterprises are strong and expanding in the region
Industry Strength Index

Industry	Size	Concentration	Job Quality	Growth			Industry Strength Index
	Total employment (2015)	Location Quotient (2015)	Average annual wage (2015)	Change in employment (2005 to 2015)	% Change in employment (2005 to 2015)	Real wage growth (2005 to 2015)	
Professional, Scientific, and Technical Services	269,383	1.9	\$137,187	89,804	50%	23%	162.2
Information	83,562	1.9	\$187,433	12,006	17%	68%	123.0
Management of Companies and Enterprises	60,707	1.7	\$167,994	18,431	44%	32%	89.9
Health Care and Social Assistance	273,847	0.9	\$57,843	97,446	55%	-5%	55.9
Accommodation and Food Services	217,874	1.0	\$26,865	52,800	32%	10%	18.9
Finance and Insurance	89,460	1.0	\$175,962	-28,912	-24%	22%	17.3
Utilities	9,323	1.0	\$150,564	-40	0%	13%	-1.9
Construction	109,873	1.1	\$76,345	-4,034	-4%	14%	-12.2
Administrative and Support and Waste Management and Remediation Services	126,668	0.9	\$56,149	15,638	14%	14%	-15.0
Transportation and Warehousing	76,261	1.0	\$64,749	8,280	12%	12%	-21.2
Retail Trade	206,178	0.8	\$40,168	303	0%	0%	-21.7
Real Estate and Rental and Leasing	39,150	1.2	\$76,528	-273	-1%	19%	-21.7
Wholesale Trade	76,662	0.8	\$90,135	1,953	3%	18%	-22.5
Manufacturing	125,960	0.6	\$101,912	-12,188	-9%	9%	-25.1
Education Services	49,846	1.1	\$46,448	12,040	32%	8%	-25.7
Other Services (except Public Administration)	84,177	1.2	\$43,739	-12,223	-13%	25%	-27.2
Arts, Entertainment, and Recreation	37,711	1.1	\$51,345	4,882	15%	9%	-37.4
Mining	1,272	0.1	\$123,159	-186	-13%	-5%	-84.3
Agriculture, Forestry, Fishing and Hunting	3,375	0.2	\$35,316	-726	-18%	-2%	-125.3

Source: U.S. Bureau of Labor Statistics; Woods & Poole Economic, Inc. Universe includes all private sector jobs covered by the federal Unemployment Insurance (UI) program.
 Note: Dollar values are in 2015 dollars.

Economic vitality

Identifying high-opportunity occupations

Understanding which occupations are strong and competitive in the region can help leaders develop strategies to connect and prepare workers for good jobs. To identify “high-opportunity” occupations in the region, we developed an **“occupation opportunity index”** based on measures of job quality and growth, including median annual wage, wage growth, job growth (in number and share), and median age of workers. A high median age of workers indicates that there will be replacement job openings as older workers retire.

Job quality, measured by the median annual wage, accounted for two-thirds of the occupation opportunity index, and growth accounted for the other one-third. Within the growth category, half was determined by wage growth and the other half was divided equally between the change in number of jobs, percent change in the number jobs, and median age of workers.

Occupation opportunity index =

Job quality

+ Growth

Median Annual Wage

Real wage growth

Change in the number of jobs

Percent change in the number of jobs

Median age of workers

Note: Each indicator was normalized as a cross-occupation z-score before taking a weighted average to derive the index.

Economic vitality

Lawyers, judges, and related workers and health diagnosing and treating practitioners rank highest

The two highest opportunity occupations listed below require some postsecondary education or certification. Lawyers, judges, and related workers and health diagnosing and treating practitioners collectively account for nearly 80,000 jobs in the region but require more than a bachelor’s degree. Operations specialties managers account for another

32,500 jobs and have a median annual wage of \$129,600. Other health-care practitioners and technical occupations had the greatest employment growth – increasing by 431 percent – but real wages declined.

Preschool, primary, secondary, and special education school teachers saw the largest growth in real wages

Occupation Opportunity Index

Occupation	Employment (2011)	Job Quality Median Annual Wage (2011)	Growth			Occupation Opportunity Index	
			Real Wage Growth (2011)	Change in Employment (2005-11)	% Change in Employment (2005-11)		Median Age (2010)
Lawyers, Judges, and Related Workers	14,610	\$151,506	8%	2,390	20%	45	2.38
Health Diagnosing and Treating Practitioners	64,980	\$117,683	16%	14,750	29%	45	1.90
Operations Specialties Managers	32,490	\$129,593	11%	850	3%	43	1.88
Advertising, Marketing, Promotions, Public Relations, and Sales Managers	16,640	\$133,181	7%	210	1%	39	1.84
Top Executives	39,480	\$130,557	3%	370	1%	47	1.79
Other Management Occupations	40,220	\$101,543	11%	970	2%	45	1.27
Engineers	26,330	\$101,470	7%	2,100	9%	42	1.18
Computer Occupations	87,550	\$95,094	3%	11,140	15%	38	1.01
Physical Scientists	6,370	\$90,626	11%	790	14%	39	0.96
Mathematical Science Occupations	2,830	\$89,328	6%	-320	-10%	43	0.86
Life Scientists	11,810	\$86,346	0%	3,930	50%	37	0.70
Architects, Surveyors, and Cartographers	3,770	\$83,418	3%	-910	-19%	46	0.67
Social Scientists and Related Workers	6,800	\$83,625	4%	-2,600	-28%	45	0.66
Financial Specialists	45,120	\$79,626	5%	3,590	9%	42	0.65
Business Operations Specialists	60,880	\$78,751	10%	-6,290	-9%	42	0.61
Other Healthcare Practitioners and Technical Occupations	2,550	\$69,992	-14%	2,070	431%	49	0.56
Postsecondary Teachers	22,790	\$79,856	-1%	-110	0%	43	0.51
Plant and System Operators	2,400	\$70,710	3%	1,090	83%	46	0.51
Supervisors of Installation, Maintenance, and Repair Workers	4,720	\$74,370	2%	-710	-13%	47	0.47
Sales Representatives, Wholesale and Manufacturing	22,500	\$70,570	7%	-1,370	-6%	44	0.45
Supervisors of Construction and Extraction Workers	5,400	\$81,420	-5%	-3,180	-37%	45	0.42
Legal Support Workers	6,030	\$64,769	11%	570	10%	40	0.38
Sales Representatives, Services	29,840	\$75,122	-4%	-1,410	-5%	41	0.31
Supervisors of Production Workers	4,640	\$62,950	6%	-1,470	-24%	46	0.25
Electrical and Electronic Equipment Mechanics, Installers, and Repairers	8,800	\$53,720	9%	4,550	107%	42	0.24
Life, Physical, and Social Science Technicians	7,050	\$55,659	14%	2,080	42%	34	0.22
Drafters, Engineering Technicians, and Mapping Technicians	10,290	\$62,726	3%	-630	-6%	45	0.20

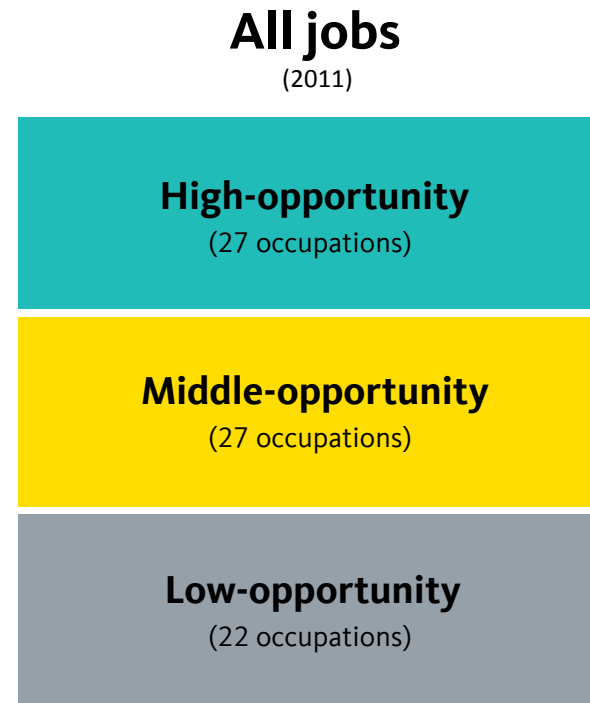
Sources: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs.

Economic vitality

Identifying high-opportunity occupations

Once the occupation opportunity index score was calculated for each occupation, occupations were sorted into three categories (high-, middle-, and low-opportunity). The average index score is zero, so an occupation with a positive value has an above-average score while a negative value represents a below-average score.

Because education level plays such a large role in determining access to jobs, we present the occupational analysis for each of three educational attainment levels: workers with a high school diploma or less, workers with more than a high school diploma but less than a bachelor’s degree, and workers with a bachelor’s degree or higher.



Note: The occupation opportunity index and the three broad categories drawn from it are only meant to provide general guidance on the level of opportunity associated with various occupations in the region, and its interpretation should be informed by an examination of individual metrics used in its calculation, which are presented in the tables on the following pages.

Economic vitality

High-opportunity occupations for workers with a high school diploma or less

Supervisory positions are high-opportunity jobs for workers without postsecondary education

Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a High School Diploma or Less

Occupation	Employment	Job Quality	Growth				Occupation Opportunity Index
	(2011)	Median Annual Wage (2011)	Real Wage Growth (2011)	Change in Employment (2005-11)	% Change in Employment (2005-11)	Median Age (2010)	
High-Opportunity							
Supervisors of Construction and Extraction Workers	5,400	\$81,420	-5.4%	-3,180	-37.1%	45	0.42
Supervisors of Production Workers	4,640	\$62,950	5.7%	-1,470	-24.1%	46	0.25
Supervisors of Transportation and Material Moving Workers	4,840	\$54,656	-5.8%	-460	-8.7%	45	-0.14
Supervisors of Building and Grounds Cleaning and Maintenance Workers	3,360	\$47,238	-3.4%	-550	-14.1%	49	-0.23
Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	15,670	\$51,541	-4.2%	-590	-3.6%	40	-0.24
Other Construction and Related Workers	4,540	\$54,159	-9.6%	-890	-16.4%	45	-0.24
Middle-Opportunity							
Other Installation, Maintenance, and Repair Occupations	26,650	\$47,934	-1.7%	-2,890	-9.8%	45	-0.25
Motor Vehicle Operators	36,560	\$37,859	4.1%	1,520	4.3%	44	-0.32
Construction Trades Workers	50,740	\$58,920	-1.8%	-32,290	-38.9%	37	-0.40
Nursing, Psychiatric, and Home Health Aides	25,140	\$30,172	3.9%	6,390	34.1%	44	-0.42
Metal Workers and Plastic Workers	10,330	\$40,431	-3.5%	-1,620	-13.6%	45	-0.44
Supervisors of Food Preparation and Serving Workers	12,760	\$34,196	3.7%	680	5.6%	36	-0.51
Low-Opportunity							
Helpers, Construction Trades	1,940	\$33,550	6.8%	-760	-28.1%	29	-0.59
Printing Workers	3,650	\$41,679	-12.3%	-420	-10.3%	43	-0.59
Assemblers and Fabricators	11,720	\$31,854	3.3%	-7,280	-38.3%	44	-0.60
Other Production Occupations	23,600	\$32,705	-0.5%	-1,830	-7.2%	41	-0.60
Building Cleaning and Pest Control Workers	45,950	\$27,768	1.9%	-470	-1.0%	44	-0.62
Material Recording, Scheduling, Dispatching, and Distributing Workers	54,360	\$36,564	-5.5%	-5,270	-8.8%	42	-0.63
Personal Appearance Workers	7,110	\$25,987	-3.0%	3,710	109.1%	41	-0.63
Grounds Maintenance Workers	12,360	\$30,884	1.0%	-2,990	-19.5%	39	-0.66
Other Personal Care and Service Workers	22,220	\$30,897	-4.2%	1,120	5.3%	42	-0.66
Textile, Apparel, and Furnishings Workers	6,740	\$24,366	2.4%	-2,270	-25.2%	47	-0.69
Material Moving Workers	44,180	\$29,506	1.5%	-6,770	-13.3%	37	-0.73
Other Protective Service Workers	21,580	\$29,521	-2.5%	-2,060	-8.7%	38	-0.75
Other Transportation Workers	4,650	\$24,860	-0.1%	-160	-3.3%	40	-0.76
Cooks and Food Preparation Workers	45,130	\$23,831	-1.1%	4,700	11.6%	34	-0.81
Other Food Preparation and Serving Related Workers	26,740	\$20,648	3.2%	5,910	28.4%	26	-0.86
Food and Beverage Serving Workers	86,450	\$20,818	1.7%	6,840	8.6%	29	-0.86
Food Processing Workers	8,260	\$28,056	-12.0%	-900	-9.8%	38	-0.95
Retail Sales Workers	111,500	\$24,070	0.1%	-10,850	-8.9%	30	-1.00
Animal Care and Service Workers	2,350	\$25,465	-11.9%	560	31.3%	33	-1.01

Source: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have a high school degree or less.

Note: Dollar values are in 2011 dollars.

Economic vitality

High-opportunity occupations for workers with more than a high school diploma but less than a bachelor's degree

Plant and system operators and supervisors of maintenance and repair workers are high-opportunity occupations for workers with more than a high school diploma but less than a bachelor's degree

Occupation Opportunity Index: Occupations by Opportunity Level for Workers with More Than a High School Diploma but Less Than a Bachelor's Degree

Occupation	Employment	Job Quality	Growth			Occupation Opportunity Index		
	(2011)	Median Annual Wage (2011)	Real Wage Growth (2011)	Change in Employment (2005-11)	% Change in Employment (2005-11)		Median Age (2010)	
High-Opportunity	Plant and System Operators	2,400	\$70,710	2.9%	1,090	83.2%	46	0.51
	Supervisors of Installation, Maintenance, and Repair Workers	4,720	\$74,370	2.2%	-710	-13.1%	47	0.47
	Legal Support Workers	6,030	\$64,769	11.2%	570	10.4%	40	0.38
	Electrical and Electronic Equipment Mechanics, Installers, and Repairers	8,800	\$53,720	8.9%	4,550	107.1%	42	0.24
	Life, Physical, and Social Science Technicians	7,050	\$55,659	14.4%	2,080	41.9%	34	0.22
	Drafters, Engineering Technicians, and Mapping Technicians	10,290	\$62,726	2.5%	-630	-5.8%	45	0.20
Middle-Opportunity	Health Technologists and Technicians	33,120	\$61,109	-1.5%	9,530	40.4%	39	0.17
	Supervisors of Office and Administrative Support Workers	22,350	\$60,200	3.5%	-1,280	-5.4%	45	0.15
	Supervisors of Sales Workers	18,340	\$50,453	0.3%	-2,070	-10.1%	42	-0.18
	Secretaries and Administrative Assistants	60,520	\$49,176	-0.4%	-2,020	-3.2%	45	-0.18
	Financial Clerks	44,980	\$42,565	3.6%	-8,820	-16.4%	44	-0.34
	Other Education, Training, and Library Occupations	20,440	\$36,180	2.2%	2,200	12.1%	45	-0.37
	Other Healthcare Support Occupations	22,290	\$39,383	-0.3%	4,640	26.3%	35	-0.41
	Information and Record Clerks	65,660	\$38,780	2.3%	-7,180	-9.9%	34	-0.54
Low-Opportunity	Other Office and Administrative Support Workers	48,620	\$37,019	6.0%	-21,630	-30.8%	40	-0.61
	Entertainment Attendants and Related Workers	8,050	\$22,552	7.0%	570	7.6%	28	-0.80
	Communications Equipment Operators	2110	\$32,220	-10.1%	-930	-30.6%	38	-0.84

Source: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have more than a high school degree but less than a BA. Note: Dollar values are in 2011 dollars.

Economic vitality

High-opportunity occupations for workers with a bachelor’s degree or higher

Legal fields, health diagnosing, and operations specialties managers are all high-opportunity occupations for workers with a bachelor’s degree or higher

Occupation Opportunity Index: Occupations by Opportunity Level for Workers with a Bachelor’s Degree or Higher

Occupation	Employment	Job Quality	Growth			Occupation Opportunity Index	
	(2011)	Median Annual Wage (2011)	Real Wage Growth (2011)	Change in Employment (2005-11)	% Change in Employment (2005-11)		Median Age (2010)
High-Opportunity							
Lawyers, Judges, and Related Workers	14,610	\$151,506	7.6%	2,390	19.6%	45	2.38
Health Diagnosing and Treating Practitioners	64,980	\$117,683	16.0%	14,750	29.4%	45	1.90
Operations Specialties Managers	32,490	\$129,593	10.7%	850	2.7%	43	1.88
Advertising, Marketing, Promotions, Public Relations, and Sales Managers	16,640	\$133,181	6.9%	210	1.3%	39	1.84
Top Executives	39,480	\$130,557	2.6%	370	0.9%	47	1.79
Other Management Occupations	40,220	\$101,543	11.1%	970	2.5%	45	1.27
Engineers	26,330	\$101,470	7.4%	2,100	8.7%	42	1.18
Computer Occupations	87,550	\$95,094	3.1%	11,140	14.6%	38	1.01
Physical Scientists	6,370	\$90,626	10.9%	790	14.2%	39	0.96
Mathematical Science Occupations	2,830	\$89,328	6.5%	-320	-10.2%	43	0.86
Life Scientists	11,810	\$86,346	0.1%	3,930	49.9%	37	0.70
Architects, Surveyors, and Cartographers	3,770	\$83,418	2.6%	-910	-19.4%	46	0.67
Social Scientists and Related Workers	6,800	\$83,625	4.0%	-2,600	-27.7%	45	0.66
Financial Specialists	45,120	\$79,626	4.9%	3,590	8.6%	42	0.65
Business Operations Specialists	60,880	\$78,751	9.9%	-6,290	-9.4%	42	0.61
Other Healthcare Practitioners and Technical Occupations	2,550	\$69,992	-14.0%	2,070	431.3%	49	0.56
Postsecondary Teachers	22,790	\$79,856	-0.9%	-110	-0.5%	43	0.51
Sales Representatives, Wholesale and Manufacturing	22,500	\$70,570	7.4%	-1,370	-5.7%	44	0.45
Sales Representatives, Services	29,840	\$75,122	-4.2%	-1,410	-4.5%	41	0.31
Middle-Opportunity							
Librarians, Curators, and Archivists	3,380	\$60,266	0.0%	-670	-16.5%	49	0.13
Media and Communication Equipment Workers	3,880	\$51,629	9.2%	1,680	76.4%	40	0.12
Media and Communication Workers	12,240	\$61,477	-5.5%	1,510	14.1%	42	0.03
Art and Design Workers	13,500	\$58,130	-3.7%	3,920	40.9%	40	0.01
Specialists	27,510	\$50,043	2.5%	6,510	31.0%	42	-0.02
Preschool, Primary, Secondary, and Special Education School Teachers	47,080	\$58,328	-1.7%	-2,960	-5.9%	42	-0.04
Entertainers and Performers, Sports and Related Workers	8,960	\$49,936	2.1%	530	6.3%	37	-0.17
Other Teachers and Instructors	15,540	\$46,484	-5.2%	2,330	17.6%	39	-0.33
Other Sales and Related Workers	11,440	\$52,598	-22.5%	10	0.1%	45	-0.50

Source: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes all nonfarm wage and salary jobs for which the typical worker is estimated to have a BA degree or higher.

Note: Dollar values are in 2011 dollars.

Economic vitality

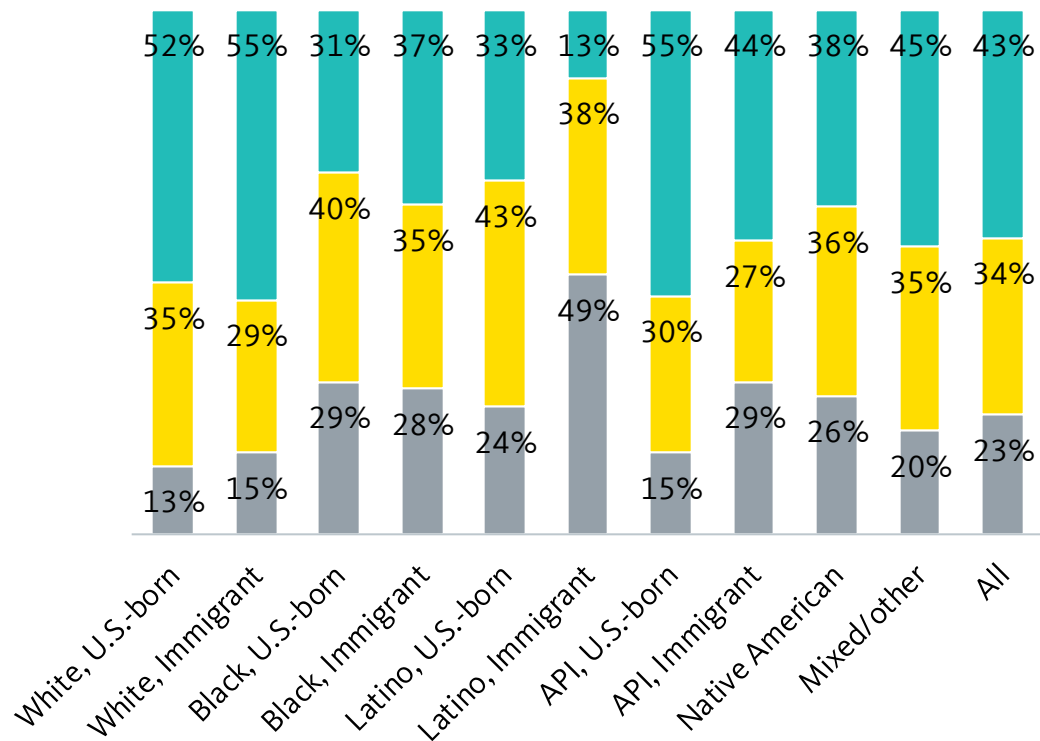
Latinos and African Americans have the least access to high-opportunity jobs

Examining access to high-opportunity jobs by race/ethnicity and nativity, we find that U.S.-born Asians or Pacific Islander workers and White immigrant workers are most likely to be employed in the region’s high-opportunity occupations. U.S.-born Black and Latino workers are most likely to be found in middle-opportunity occupations while Latino immigrants are the most likely to be in low-opportunity occupations.

Differences in education levels play a large role in determining access to high-opportunity jobs, but racial discrimination; work experience, social networks; and, for immigrants, legal status and English language ability, are also contributing factors.

Latinos and African Americans are least likely to access high-opportunity jobs
Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, All Workers

- High Opportunity
- Middle Opportunity
- Low Opportunity



Source: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian non-institutional population ages 25 through 64.

Economic vitality

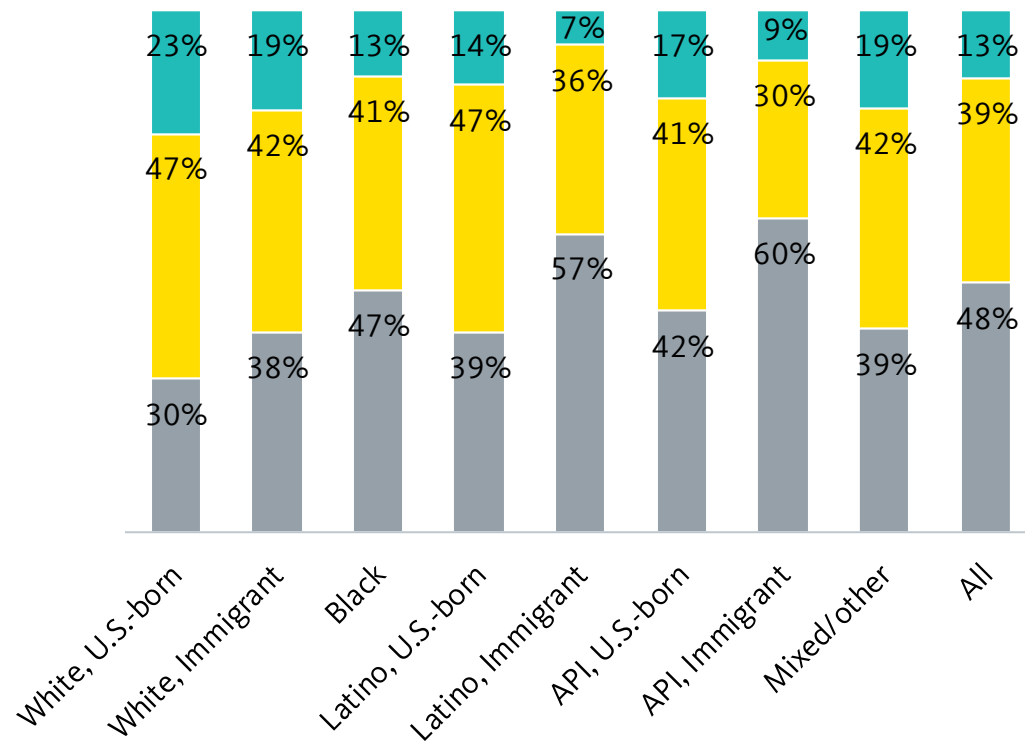
Access to high-opportunity jobs by race for workers with a high school diploma or less

Among workers with low education levels, White workers and workers of mixed/other races are most likely to be in high-opportunity jobs, followed by U.S.-born Asian or Pacific Islander workers. Latino and Asian or Pacific Islander immigrants are by far the least likely to be in high-opportunity jobs and the most likely to be in low-opportunity jobs. Black workers are less likely than White workers to be in high-opportunity jobs and more likely to be in low-opportunity jobs.

Of those with low education levels, Latino and Asian or Pacific Islander immigrants are least likely to access high-opportunity jobs

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Low Educational Attainment

- High Opportunity
- Middle Opportunity
- Low Opportunity



Source: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian non-institutional population ages 25 through 64 with a high school degree or less. Note: Data for some racial/ethnic groups are excluded due to small sample size.

Economic vitality

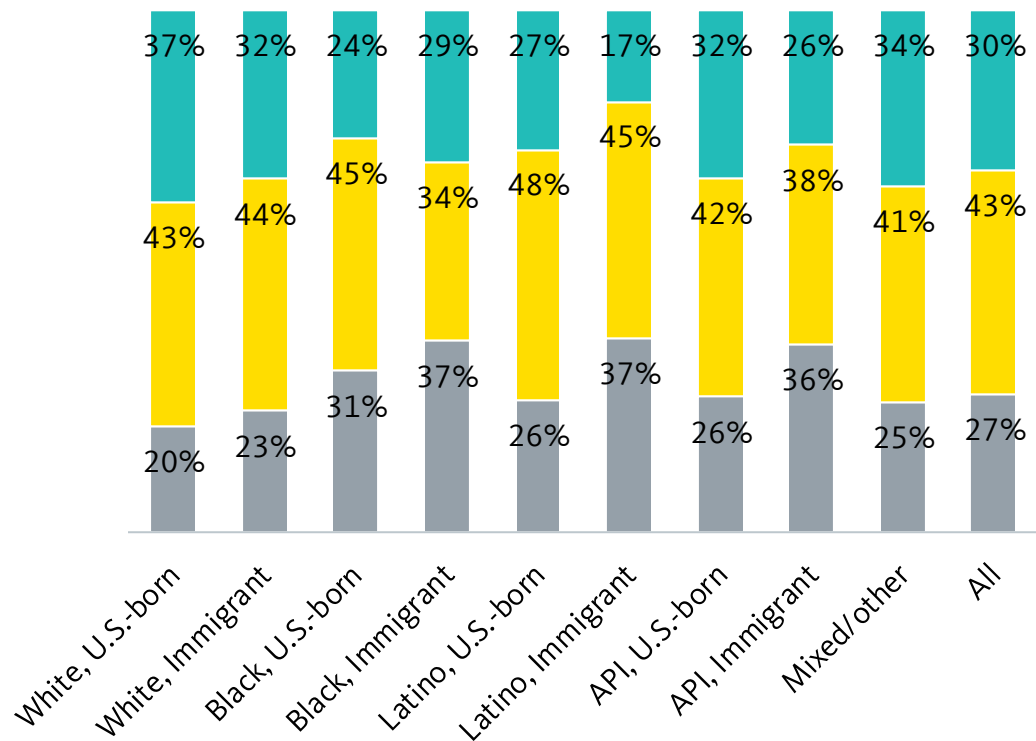
Access to high-opportunity jobs by race for workers with more than a high school diploma but less than a BA

Among workers with middle education levels, White workers, workers of mixed/other races, and U.S-born Asian or Pacific Islander workers are most likely to be found in high-opportunity jobs. Latino immigrants have the least access to high-opportunity jobs, followed by U.S.-born Black workers. U.S.-born Latino workers are most likely to be in middle-opportunity jobs, while Black and Latino immigrants are the most likely to be in low-opportunity occupations.

Of those with middle education levels, Latino immigrants, African Americans, and Asian or Pacific Islander immigrants are least likely to access high-opportunity jobs

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with Middle Educational Attainment

- High Opportunity
- Middle Opportunity
- Low Opportunity



Source: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian non-institutional population ages 25 through 64 with more than a high school degree but less than a BA. Note: Data for some racial/ethnic groups are excluded due to small sample size.

Economic vitality

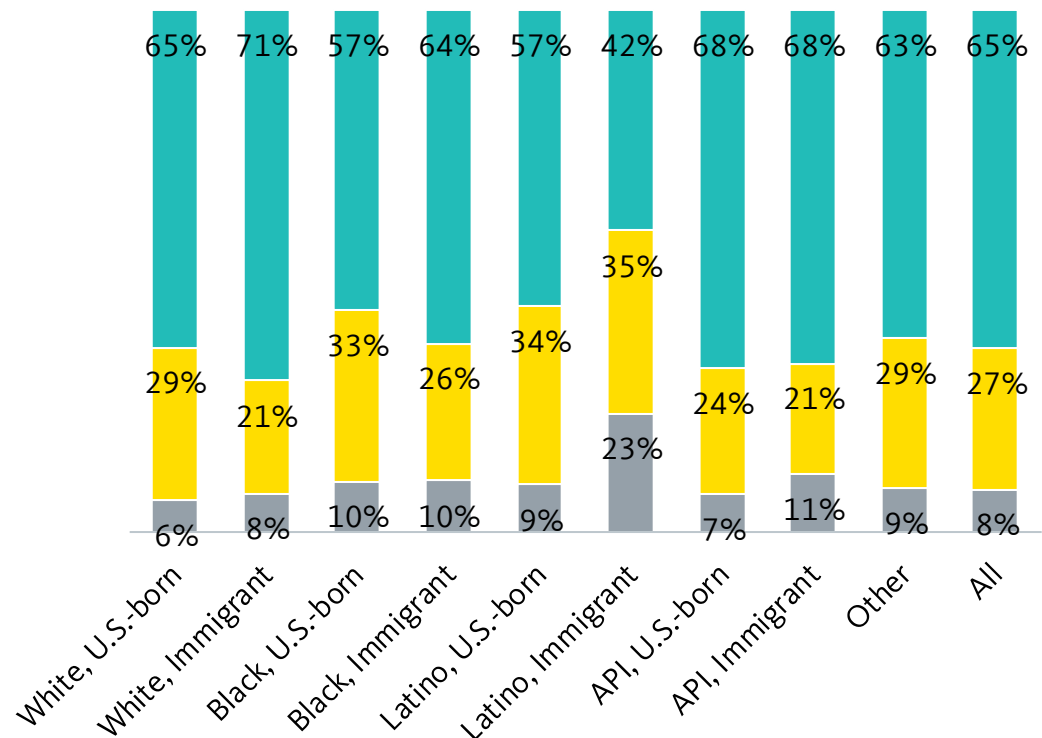
Even among college graduates, Black and Latino workers have less access to high-opportunity jobs

Differences in access to high-opportunity occupations tend to decrease even more for workers with college degrees, though racial/ethnic and nativity gaps remain. Asian or Pacific Islander workers, regardless of nativity, and Whites are the most likely to be in high-opportunity occupations. Latino immigrants with college degrees have by far the least access to high-opportunity jobs and are more likely to be in low-opportunity occupations.

Differences in occupational opportunity by race/ethnicity and nativity shrink somewhat for college-educated workers

Opportunity Ranking of Occupations by Race/Ethnicity and Nativity, Workers with High Educational Attainment

- High Opportunity
- Middle Opportunity
- Low Opportunity



Source: U.S. Bureau of Labor Statistics; Integrated Public Use Microdata Series. Universe includes the employed civilian non-institutional population ages 25 through 64 with a BA degree or higher. Note: Data for some racial/ethnic groups are excluded due to small sample size.

Readiness



Readiness

Highlights

How prepared are the region's residents for the 21st century economy?

- There is a skills and education gap for people of color, with the share of future jobs requiring at least an associate's degree in the state being higher than the proportion of people with the requisite education level in the region.
- Education levels differ dramatically among immigrant groups. For example, South and East Asian immigrants have high education levels and Southeast Asian, Mexican, and Central American immigrants have relatively low levels of education.
- Educational attainment and pursuit of it has increased dramatically for youth of color. However, youth of color are still far less likely to finish high school than their White counterparts.
- Communities of color are facing significant health challenges, with over 68 percent of the region's African Americans and Latinos obese or overweight.

Percent of Latino immigrants with at least an associate's degree:

15%

Number of Black disconnected youth:

9,195

Percent of adults who are overweight or obese:

55%

Readiness

An education and skills gap for people of color

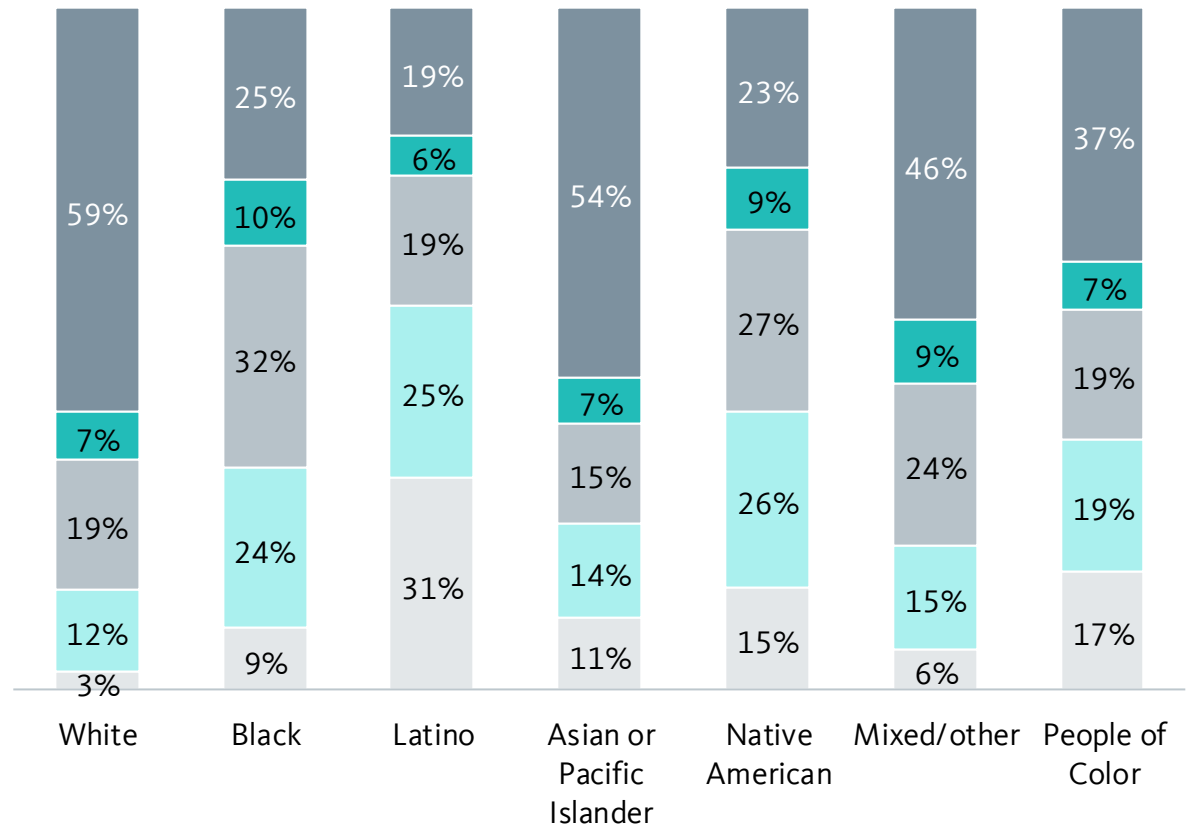
The region has large differences in educational attainment by race/ethnicity and nativity. Over half of Asians or Pacific Islanders and Whites have a bachelor's degree or higher, compared with 19 percent of Latinos, 23 percent of Native Americans, 25 percent of Blacks, and 46 percent of people of mixed/other races.

While not shown in the graph, people of every race/ethnicity and nativity improved their education levels since 1990. Despite this progress, African Americans and Latinos, who will account for an increasing share of the region's workforce, are still less prepared for the future economy than their White counterparts.

Latinos, Native Americans, and African Americans have the lowest share of residents attaining bachelor's degree or higher compared with other subgroups

Educational Attainment by Race/Ethnicity, 2014

- Bachelor's degree or higher
- Associate's degree
- Some college
- High school diploma
- Less than high school diploma



Source: Integrated Public Use Microdata Series. Universe includes all persons ages 25 through 64.
 Notes: Data represent a 2010 through 2014 average.

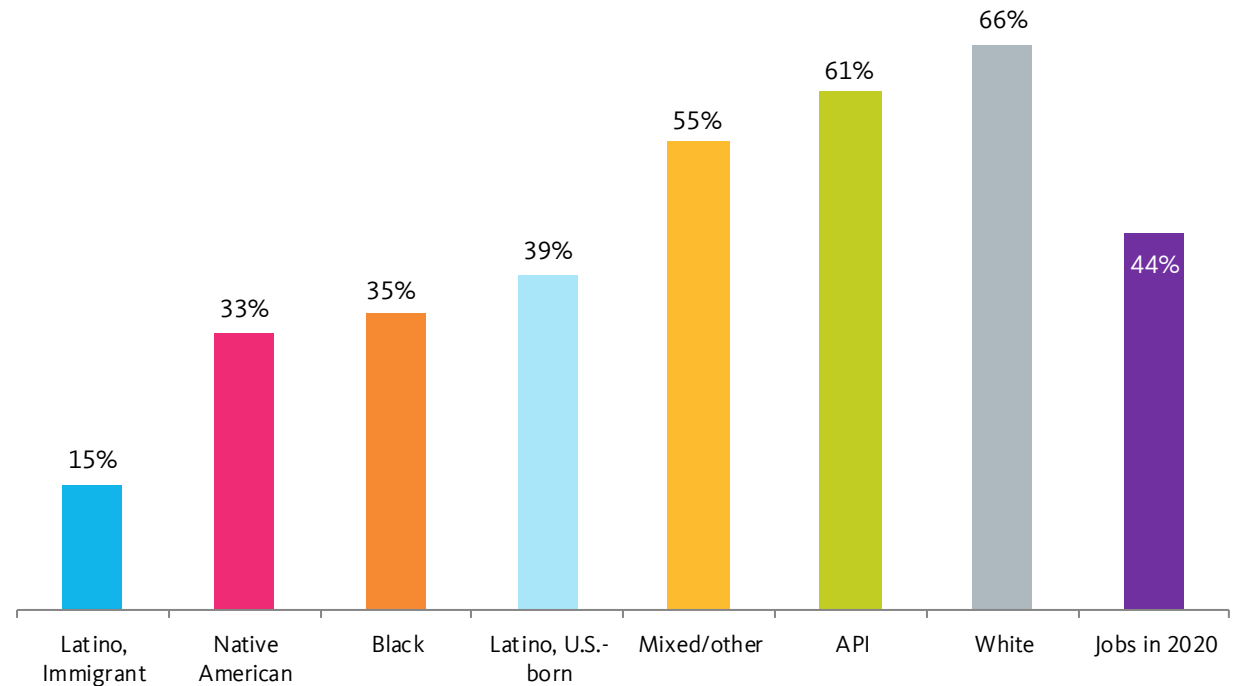
Readiness

An education and skills gap for people of color

(continued)

The region will face a skills gap unless education levels increase. By 2020, 44 percent of the state's jobs will require an associate's degree or higher. Only 39 percent of U.S.-born Latinos, 35 percent of Blacks, 33 percent of Native Americans, and 15 percent of Latino immigrants have that level of education.

The region will face a skills gap unless education levels increase for Latinos, Native Americans, and African Americans
 Share of Working-Age Population with an Associate's Degree or Higher by Race/Ethnicity and Nativity, 2014 and Projected Share of Jobs that Require an Associate's Degree or Higher, 2020



Sources: Georgetown Center for Education and the Workforce; Integrated Public Use Microdata Series. Universe for education levels of working-age population includes all persons ages 25 through 64.
 Note: Data for 2014 by race/ethnicity and nativity represent a 2010 through 2014 average for the Five-County Bay Area region; data on jobs in 2020 represent a state-level projection for California.

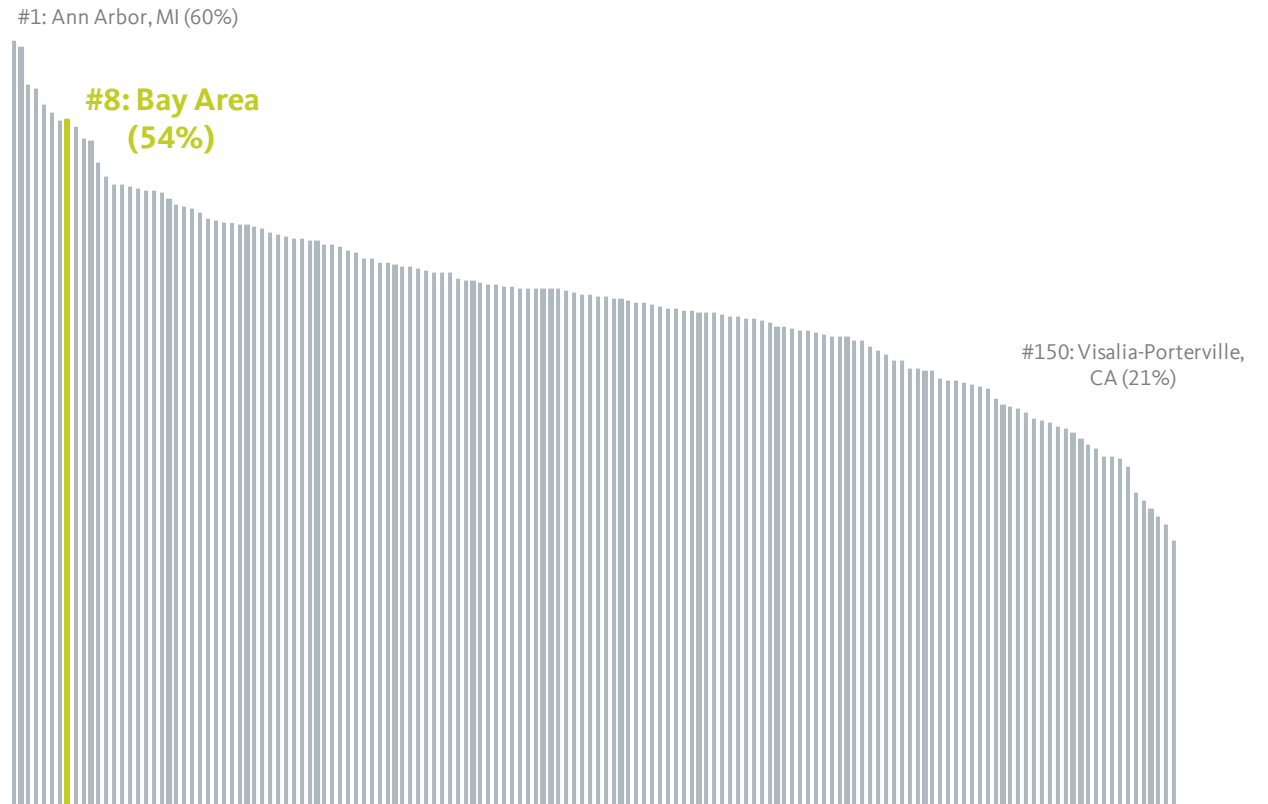
Readiness

Relatively high education levels overall

The Bay Area ranks eighth among the largest 150 metro regions on the share of residents with an associate’s degree or higher. The region’s share of residents with an associate’s degree or higher is 54 percent, slightly lower than the share in San Jose (56 percent).

The region also ranks 8th highest on the share of residents with a bachelor’s degree or higher. Roughly 47 percent of the population has a bachelor’s degree or higher in the Bay Area compared with 49 percent in San Jose.

The region ranks in the top ten on the share of residents with an associate’s degree or higher
Percent of the Population with an Associate’s Degree or Higher in 2014: Largest 150 Metros Ranked



Source: Integrated Public Use Microdata Series. Universe includes all persons ages 25 through 64.
 Note: Data represent a 2010 through 2014 average.

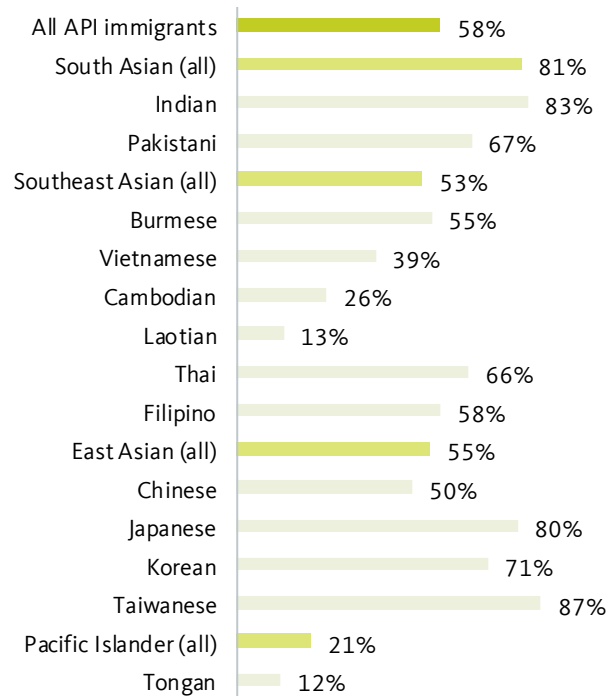
Readiness

High variation in education levels among immigrants

There is a lot of variation among education levels for Asian or Pacific Islander immigrants: Taiwanese, Indian, and Japanese immigrants have the highest education levels while Laotian and Tongan immigrants have the lowest levels. Just 13 percent of Laotian immigrants have an associate’s degree or higher compared to 66 percent of Thai immigrants and 87 percent of Taiwanese immigrants. Among all Pacific Islanders, 21 percent have an associate’s degree or higher.

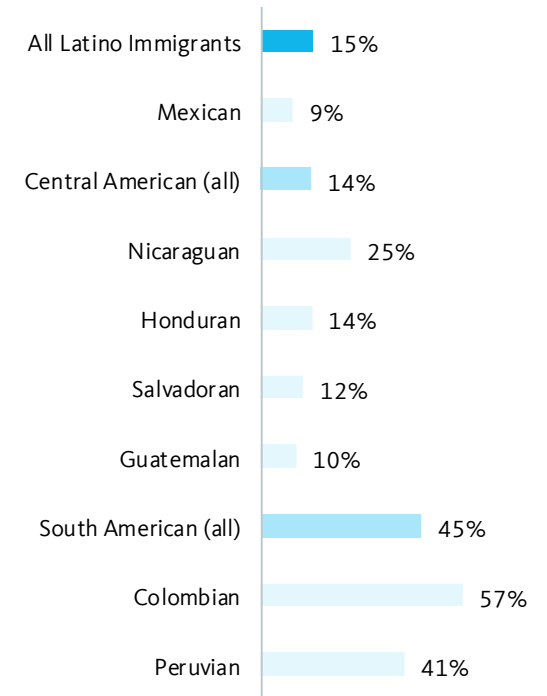
There is also wide range in education levels among Latino immigrants. Immigrants from Central America and Mexico tend to have very low education levels while those from South America tend to have higher education levels. For example, 57 percent of immigrants from Colombia have at least an associate’s degree compared with 9 percent of Mexican immigrants.

There is a considerable range in education levels among Asian or Pacific Islander immigrants
Asian or Pacific Islander Immigrants, Percent with an Associate’s Degree or Higher by Origin, 2014



Source: Integrated Public Use Microdata Series. Universe includes all persons ages 25 through 64.
 Note: Data represent a 2010 through 2014 average.

South American immigrants have higher education levels than Mexican and Central American immigrants
Latino Immigrants, Percent with an Associate’s Degree or Higher by Origin, 2014



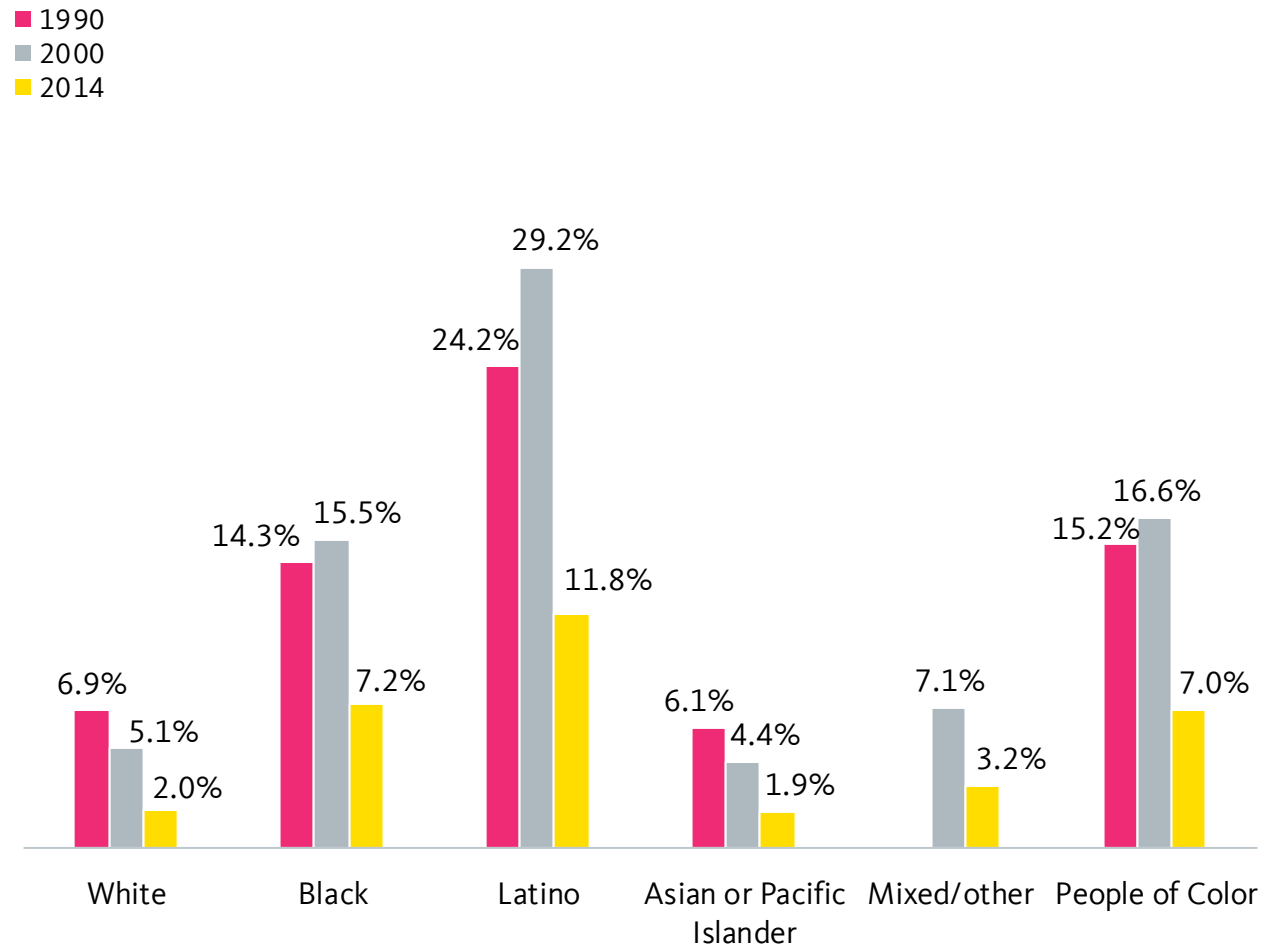
Source: Integrated Public Use Microdata Series. Universe includes all persons ages 25 through 64.
 Note: Data represent a 2010 through 2014 average.

Readiness

More youth are getting high school diplomas, but Latinos are more likely to be behind

The share of youth who do not have a high school education and are not pursuing one has declined considerably since 1990 for all racial/ethnic groups. Despite the overall improvement, youth of color (with the exception of Asian or Pacific Islander youth) are still less likely to finish high school than White youth. Latinos have particularly high rates of dropout or non-enrollment, with 12 percent lacking and not pursuing a high school diploma.

Educational attainment and enrollment among youth has improved for all groups since 1990
Percent of 16- to 24-Year-Olds Not Enrolled in School and Without a High School Diploma, 1990 to 2014



Source: Integrated Public Use Microdata Series.
 Note: Data for some racial/ethnic groups are excluded due to small sample size. Data for 2014 represents a 2010 through 2014 average.

Readiness

Many youth remain disconnected from work or school

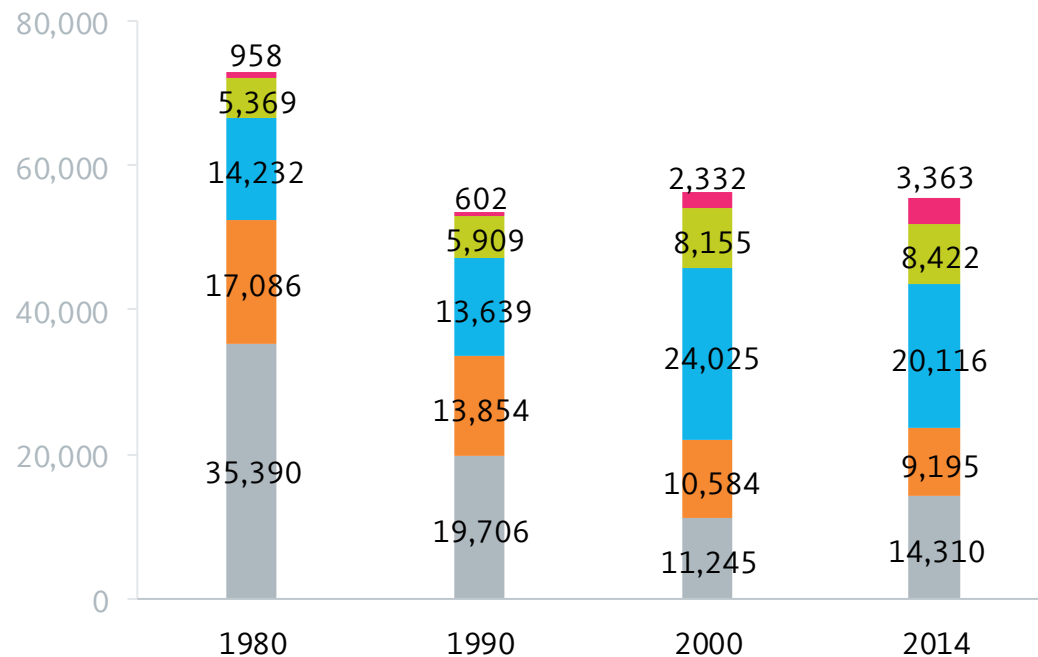
While trends in the pursuit of education have been positive for youth of color, the number of “disconnected youth” who are neither in school nor working remains high. Of the region’s 55,400 disconnected youth, 36 percent are Latino, 26 percent are White, 17 percent are Black, and 15 percent are Asian or Pacific Islander.

Since 2000, the number of disconnected youth decreased slightly. This was largely due to improvements among Black and Latino youth; all other groups saw a slight increase.

There are about 55,400 disconnected youth in the region

Disconnected Youth: 16- to 24-Year-Olds Not in Work or School, 1980 to 2014

- Native American or Other
- Asian or Pacific Islander
- Latino
- Black
- White



Source: Integrated Public Use Microdata Series.
 Note: Data for 2014 represent a 2010 through 2014 average.

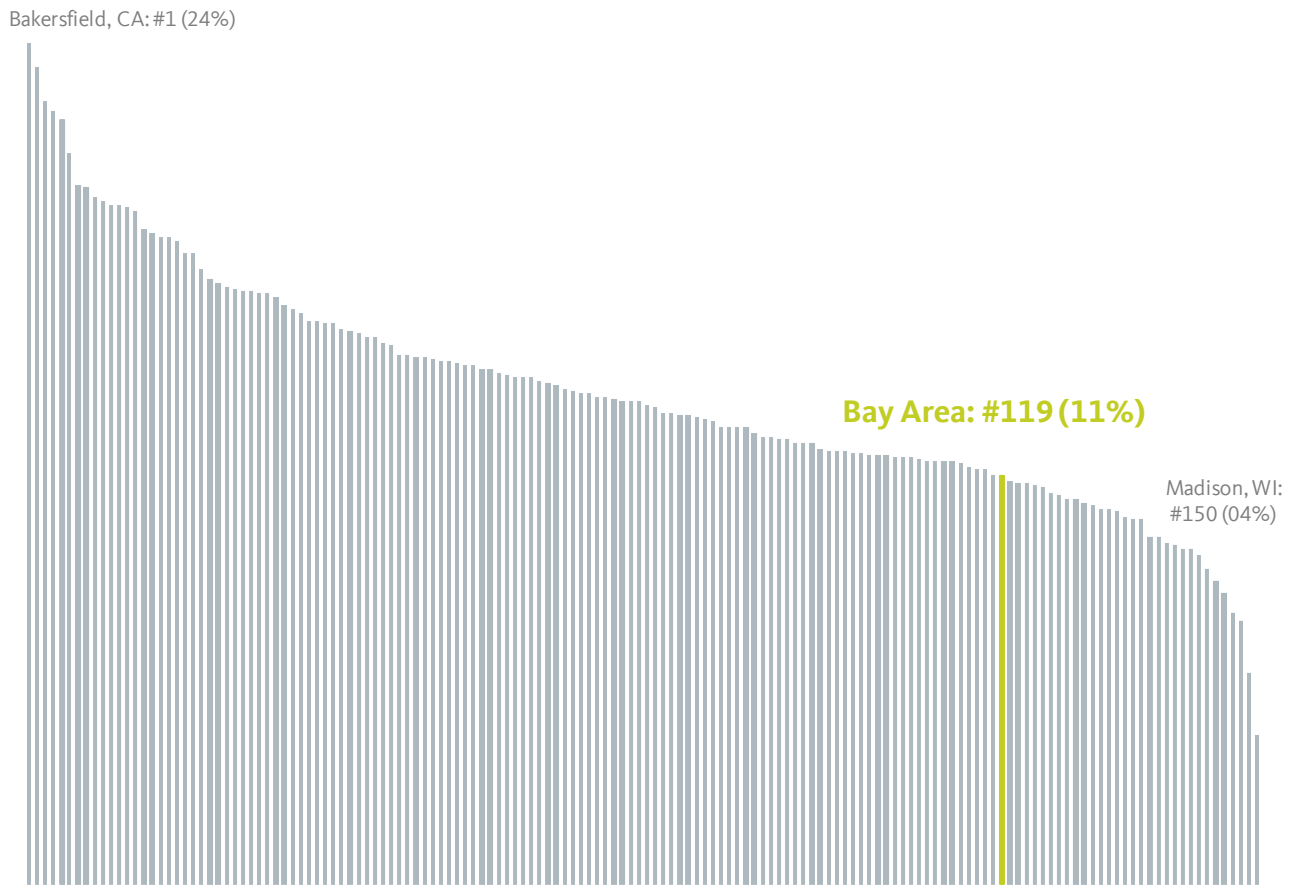
Readiness

Many youth remain disconnected from work or school

(continued)

Despite the drop in disconnected youth over the last decade, 11 percent of the Bay Area's youth are not working or in school. This places the region at 119th out of the largest 150 metro areas – compared to similarly sized metro areas in the West, the region is doing better than Los Angeles which is ranked 75th, but worse than San Jose, which is ranked 139th.

The Bay Area ranks among the bottom third of regions in its share of disconnected youth
Percent of 16- to 24-Year-Olds Not in Work or School, 2014: Largest 150 Metros Ranked



Source: Integrated Public Use Microdata Series.
Note: Data represent a 2010 through 2014 average.

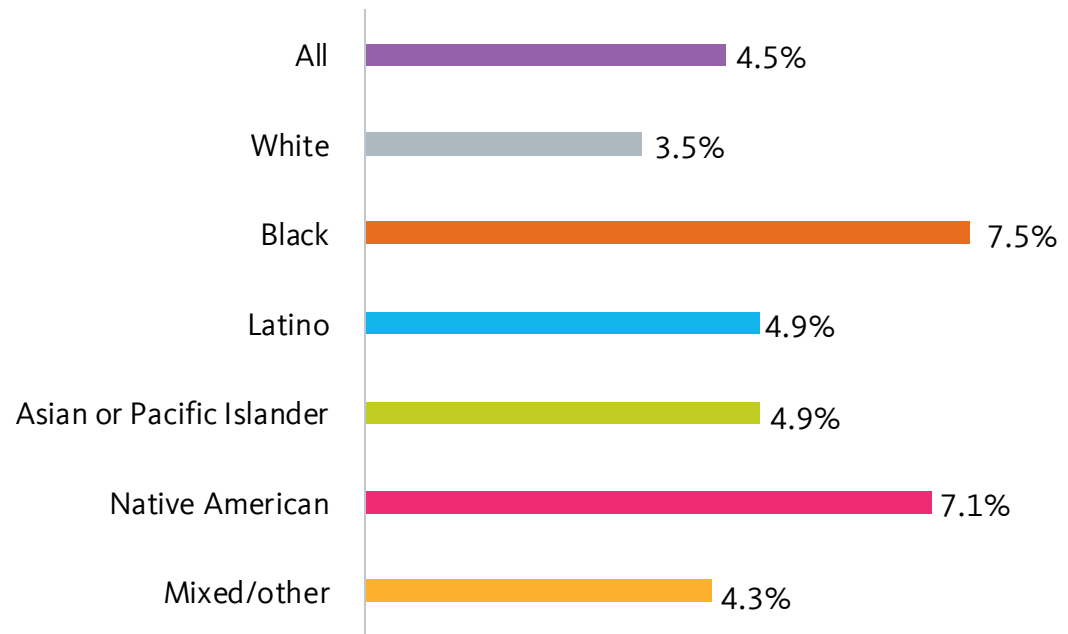
Readiness

Healthy food access varies by race/ethnicity

Limited supermarket access areas (LSAs) are defined as areas where residents must travel significantly farther to reach a supermarket than the “comparatively acceptable” distance traveled by residents in well-served areas with similar population densities and car ownership rates.

Black and Native American residents are the most likely to live in LSAs while White residents are the least likely: just 3.5 percent of White residents live in LSAs compared with 7.5 percent of Black residents.

People of color are more likely to live in food deserts
Percent Living in Limited Supermarket Access Areas by Race/Ethnicity, 2014



Sources: U.S. Census Bureau; The Reinvestment Fund. See the “Data and Methods” section for details.
 Note: Data on population by race/ethnicity reflect a 2010 through 2014 average.

Readiness

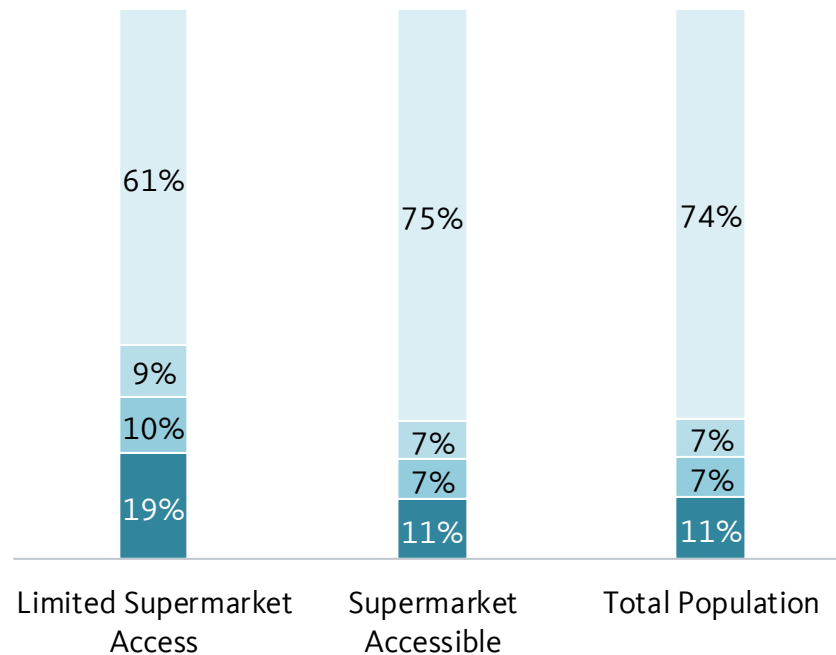
Healthy food access also varies by income

Those living in limited supermarket access areas (LSAs) are also more likely to fall below 200 percent of the federal poverty level than those living in areas with better access to healthy food. For example, 19 percent of residents in LSAs are below poverty compared with 11 percent of the total population.

Those with the lowest incomes are the most likely to live in neighborhoods with limited access to supermarkets

Poverty Composition of Food Environments, 2014

- 200% poverty or above
- 150-199% poverty
- 100-149% poverty
- Below poverty



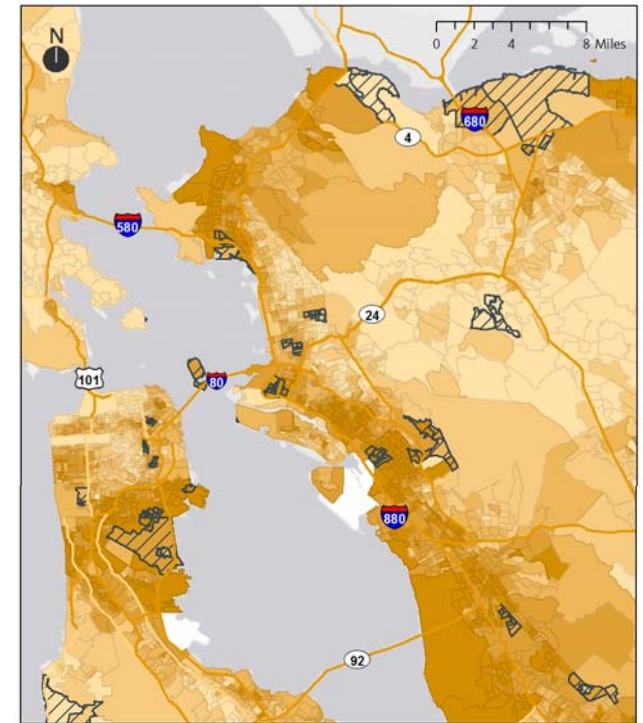
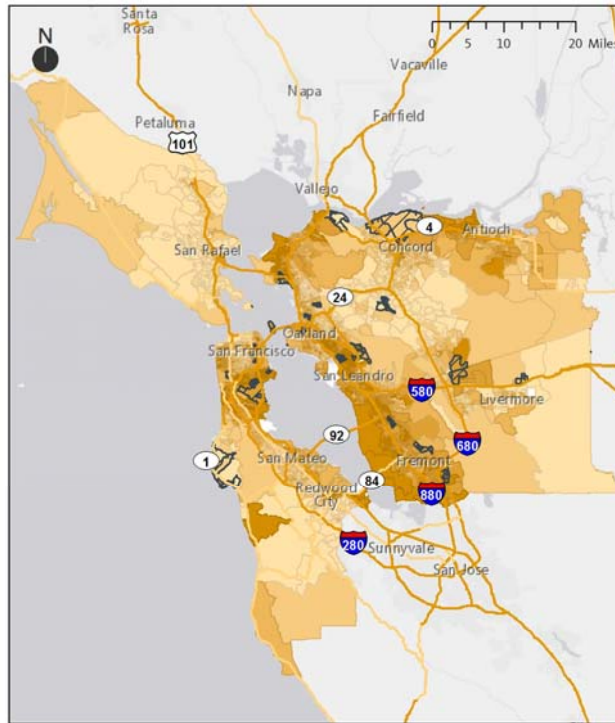
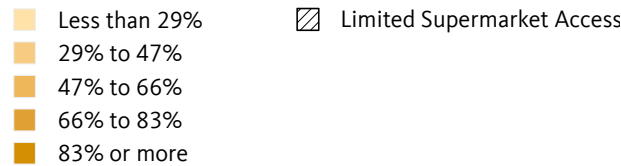
Sources: The Reinvestment Fund, 2014 LSA analysis; U.S. Census Bureau. Universe includes all persons not in groups quarters. Note: Data on population by poverty status reflects a 2010 through 2014 average.

Readiness

LSAs are located in all counties except Marin County

The region's limited supermarket access areas (LSAs) are scattered throughout the region, and can be found in the East Bay, San Francisco, and near Martinez and Walnut Creek in Contra Costa County. LSAs in eastern Contra Costa County are less diverse and more affluent than those in the East Bay and on the peninsula south of San Francisco.

LSAs are found throughout the region, but are more concentrated in the East Bay
 Percent People of Color by Census Block Group and Limited Supermarket Access Block Groups, 2014



Source: The Reinvestment Fund, 2014 LSA analysis; U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Note: Data on population by race/ethnicity represent a 2010 through 2014 average. Areas in white are missing data.

Readiness

Health challenges among communities of color

The region's African Americans have particularly high rates of obesity, diabetes, and asthma. Latinos are at high risk of being overweight and obese but have rates of diabetes and asthma close to the overall average. Whites do better than average on all measures except for asthma. Despite having lower obesity rates, Asians or Pacific Islanders have higher-than-average rates of diabetes.

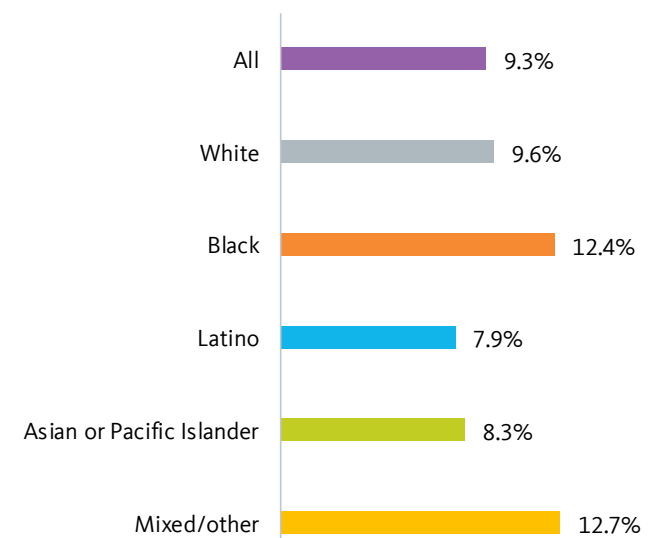
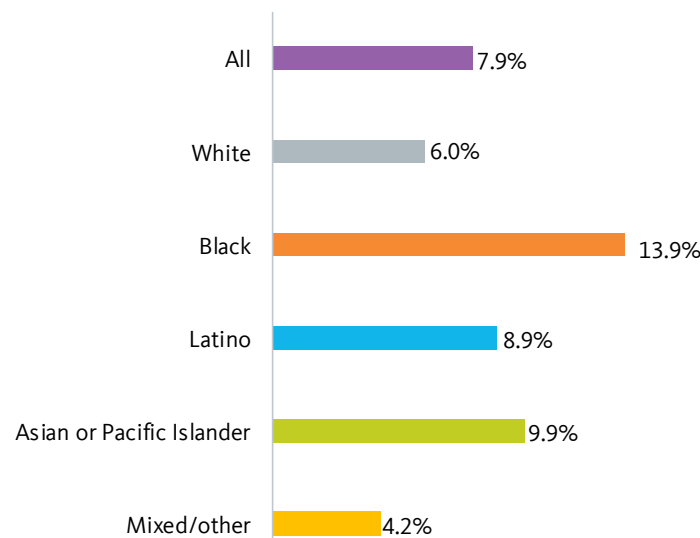
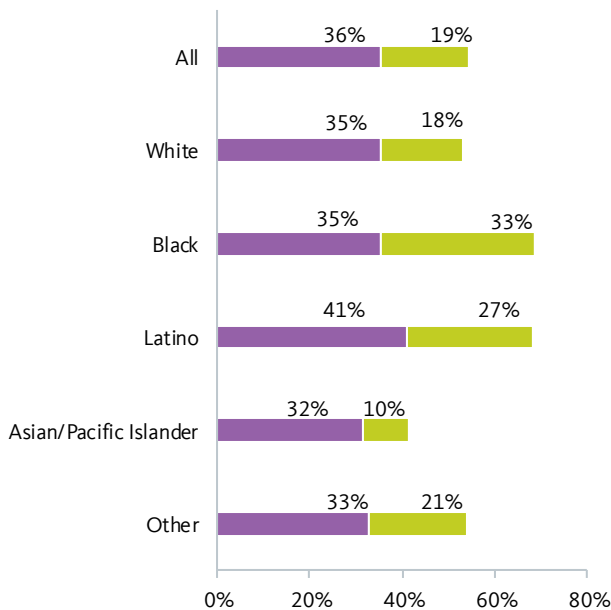
Black adults face above-average obesity, diabetes, and asthma rates, while Latinos have high rates of being overweight and obese

Adult Overweight and Obesity Rates by Race/Ethnicity, 2012

Adult Diabetes Rates by Race/Ethnicity, 2012

Adult Asthma Rates by Race/Ethnicity, 2012

■ Overweight
■ Obese



Source: Centers for Disease Control and Prevention. Universe includes adults ages 18 and older. Note: Data represent a 2008 through 2012 average.

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Source: Centers for Disease Control and Prevention. Universe includes adults ages 18 and older. Note: Data represent a 2008 through 2012 average.

Connectedness



Connectedness

Highlights

Are the region's residents and neighborhoods connected to one another and to the region's assets and opportunities?

- The Bay Area is less auto dependent than much of the nation, with 61 percent of residents driving alone to work.
- Communities of color have higher housing burdens, especially for those who are renters.
- Residential segregation is declining at the regional scale for all groups, but Black-White segregation remains high and Latino-White and Latino-Asian or Pacific Islander segregation is increasing.
- While 20 percent of the region's jobs are low wage, just 12 percent of rental housing units are affordable to low-wage worker households.

Share of Asian or Pacific Islander households without a vehicle:

14%

Share of jobs that are low wage:

20%

Share of renters who are burdened by housing costs:

50%

Connectedness

Segregation is steadily decreasing

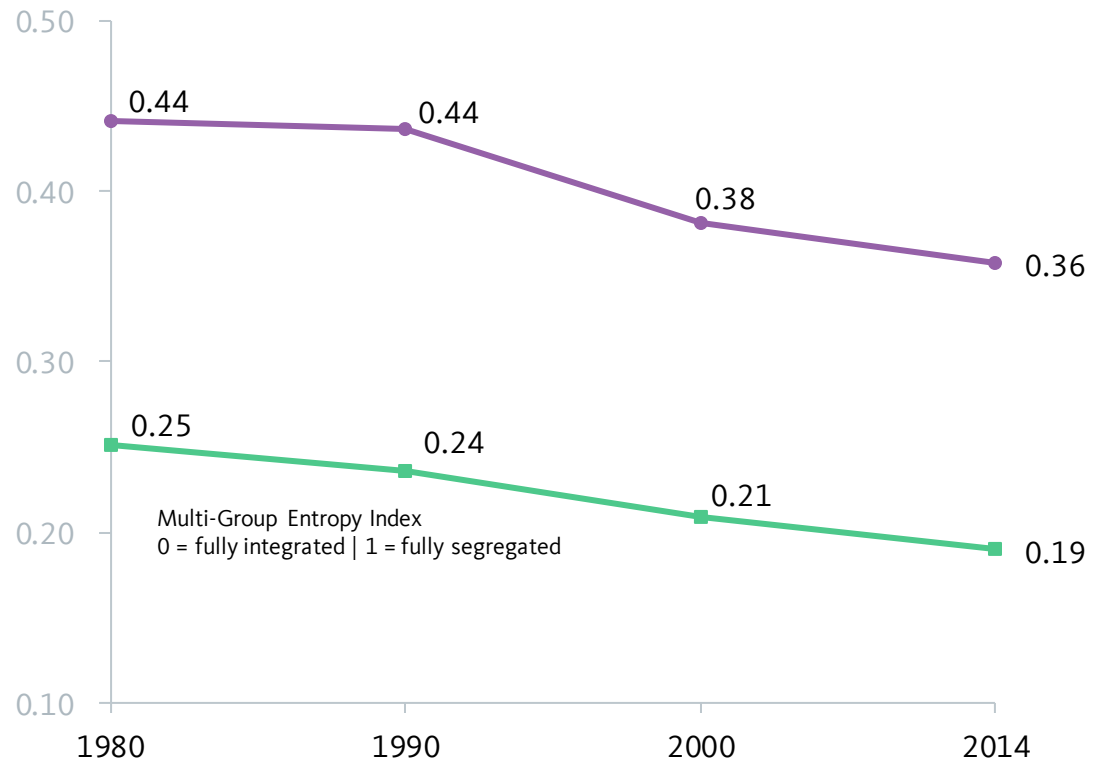
The Bay Area is less segregated by race/ethnicity than the nation, and segregation has steadily declined over time as the region has become more diverse.

Segregation is measured by the entropy index, which ranges from a value of 0, meaning that all census tracts have the same racial/ethnic composition as the entire metropolitan area (maximum integration), to a high of 1, if all census tracts contained one group only (maximum segregation).

Residential segregation is decreasing over time at the regional scale

Residential Segregation, 1980 to 2014

—■ Bay Area
—● United States



Source: U.S. Census Bureau; Geolytics. See the "Data and methods" section for details of the residential segregation index calculations.
Note: Data for 2014 represents a 2010 through 2014 average.

Connectedness

Segregation remains high between some groups and White-Latino segregation is increasing

While racial segregation overall has been on the decline in the region, it remains very high between certain groups, and is increasing for others.

The chart at the right displays the dissimilarity index, which estimates the share of a given racial/ethnic group that would need to move to a new neighborhood to achieve complete integration with the other group.

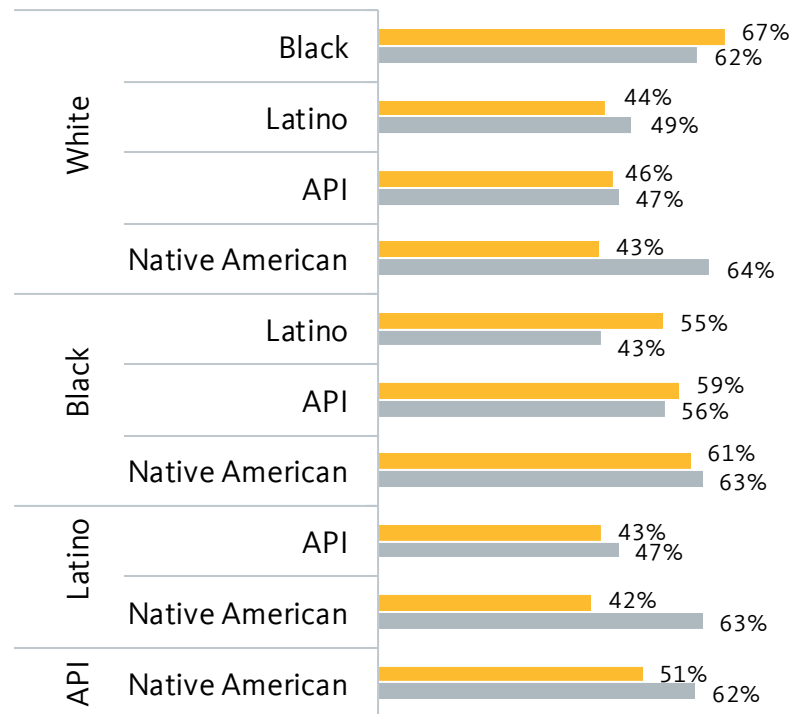
This index shows that Black-White segregation remains high: 62 percent of White Bay Area residents would need to move to achieve integration with Black residents.

It also shows that segregation is increasing between several groups. Latinos and Whites are more segregated from each other now than in 1990, and the same is true for Latinos and Asians or Pacific Islanders. Native Americans are also more segregated from all other groups than they were in 1990.

Segregation among many groups of color has decreased, but this is not the case for all race/ethnic groups

Residential Segregation, 1990 and 2014, Measured by the Dissimilarity Index

■ 1990
■ 2014



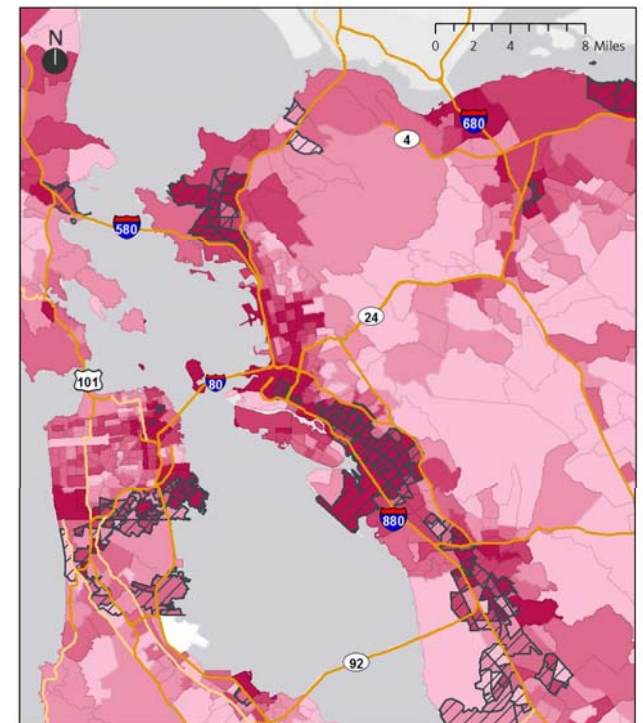
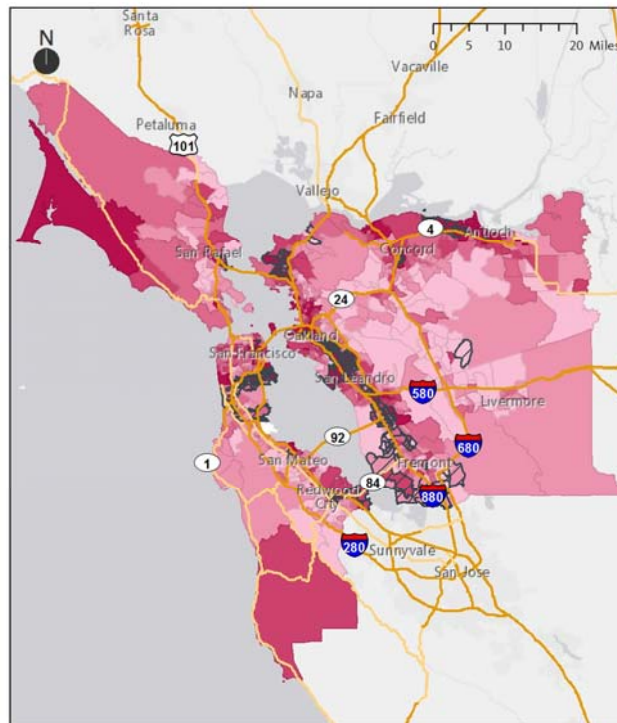
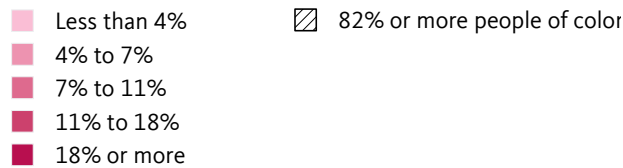
Source: U.S. Census Bureau; Geolytics, Inc. Data reported is the dissimilarity index for each combination of racial/ethnic groups. See the "Data and methods" section for details of the residential segregation index calculations. Data for 2014 represents a 2010 through 2014 average.

Connectedness

Poverty a challenge for communities of color

The overall poverty rate is 11 percent but this varies from less than 4 percent among inland East Bay neighborhoods to 18 percent or higher in neighborhoods throughout Oakland, San Francisco, Richmond, Hayward, and Pittsburg. Neighborhoods with the highest share of people of color (82 percent or more) tend to have higher poverty rates than those with smaller shares of people of color.

Areas of high poverty (18 percent or higher) are found primarily in the cities of Oakland, San Francisco, Richmond, Hayward, and Pittsburg
Percent Population Below the Poverty Level by Census Tract, 2014



Sources: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all persons not in group quarters. Note: Data represent a 2010 through 2014 average. Areas in white have missing data.

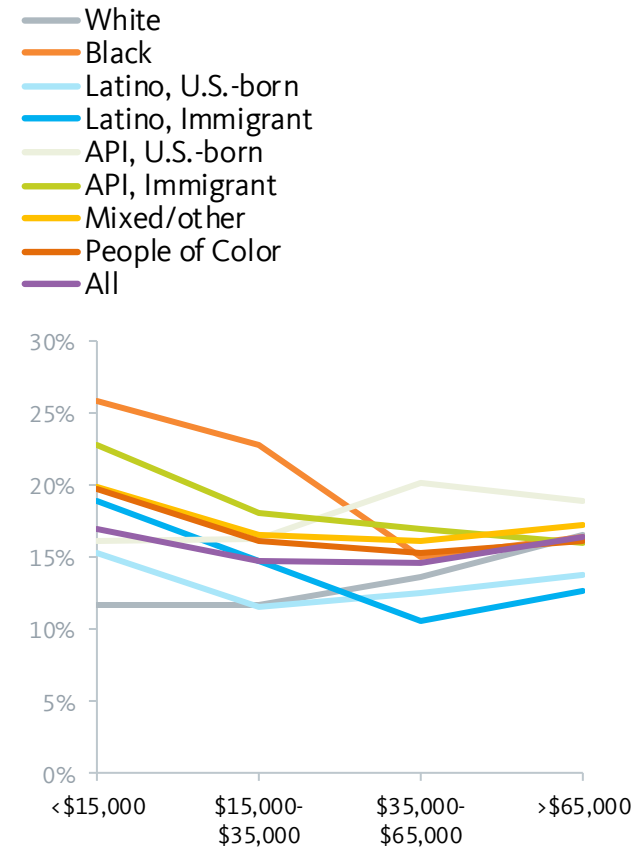
Connectedness

People of color are more likely to rely on the region's transit system to get to work

Income and race both play a role in determining who uses the Bay Area's bus and rail systems to get to work. Very low-income African Americans and Asian or Pacific Islander immigrants are most likely to get to work using public transit, but transit use declines rapidly for these groups as incomes increase. For Whites and U.S.-born Asians or Pacific Islanders, public transit use actually increases among higher-income workers.

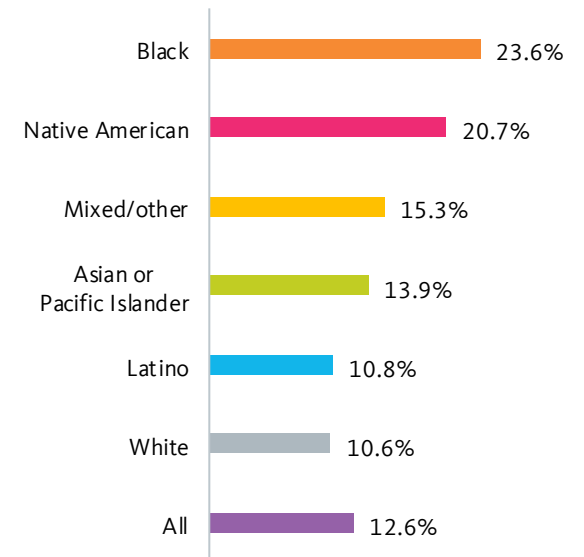
Households of color are also less likely to own cars than White households. Across the region, 11 percent of White households do not have access to a car, but the share is nearly doubled for Native American households. Nearly a quarter of Black households do not have a car. Households of mixed/other races and Asian or Pacific Islander households are also more likely to be carless than Whites.

Transit use varies by income and race
Percent Using Public Transit by Annual Earnings and Race/Ethnicity and Nativity, 2014



Source: Integrated Public Use Microdata Series. Universe includes workers ages 16 and older with earnings.
 Notes: Data represent a 2010 through 2014 average.

Households of color are less likely to own cars
Percent of Households Without a Vehicle by Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series. Universe includes all households (no group quarters).
 Notes: Data represent a 2010 through 2014 average.

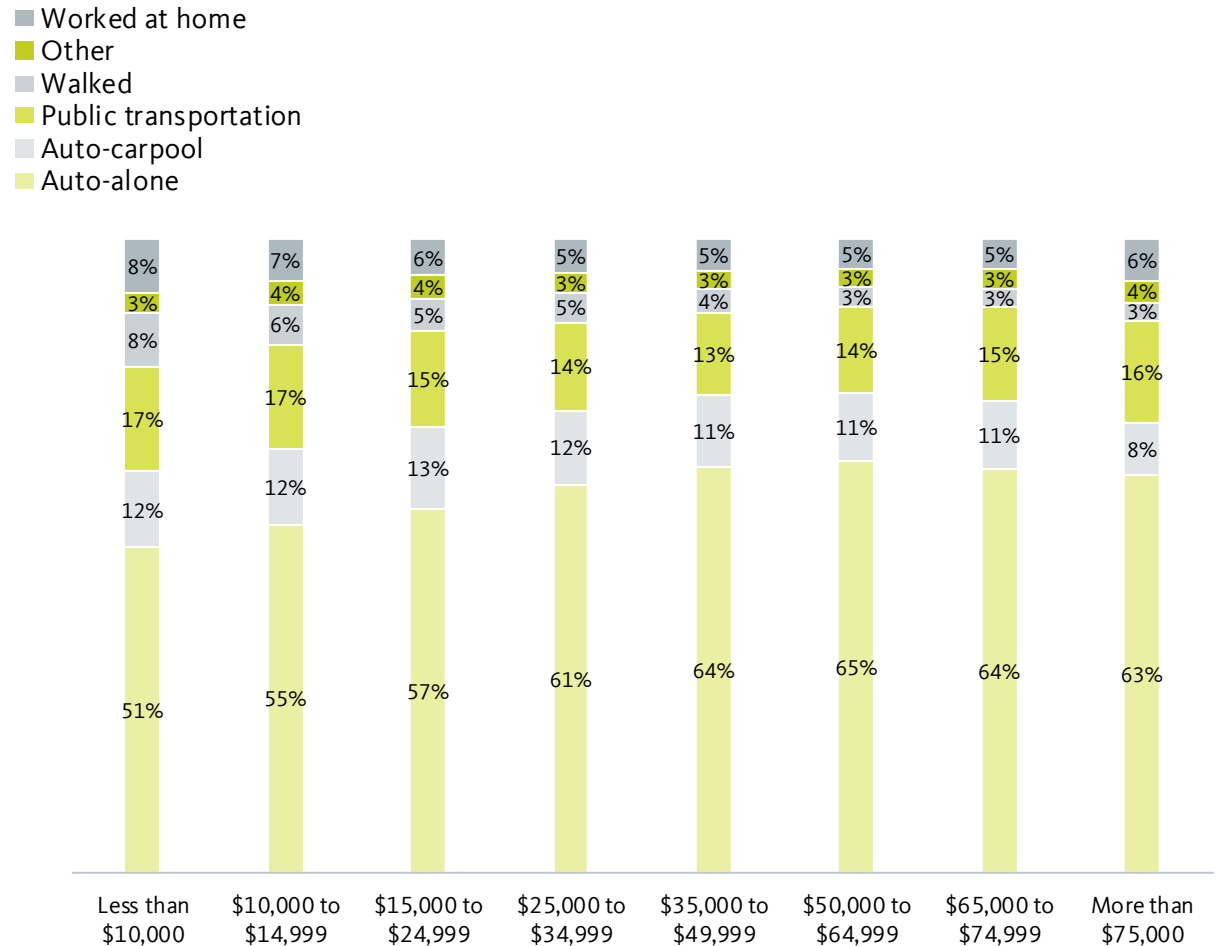
Connectedness

Low-income residents are less likely to drive alone to work

While the majority of residents in the region – 61 percent – drive alone to work, a lower share of workers drive to work in the Bay Area than in other metro areas. Single-driver commuting also varies by income. Only 51 percent of very low-income workers (earning under \$10,000 per year) drive alone to work, compared with 63 percent of workers who make over \$75,000 a year. In addition, roughly the same share of lower income workers and higher income workers use public transit to get to work.

Lower-income residents are less likely to drive alone to work

Means of Transportation to Work by Annual Earnings, 2014



Source: Integrated Public Use Microdata Series. Universe includes workers ages 16 and older with earnings.
 Note: Data represent a 2010 through 2014 average. Dollar values are in 2014 dollars.

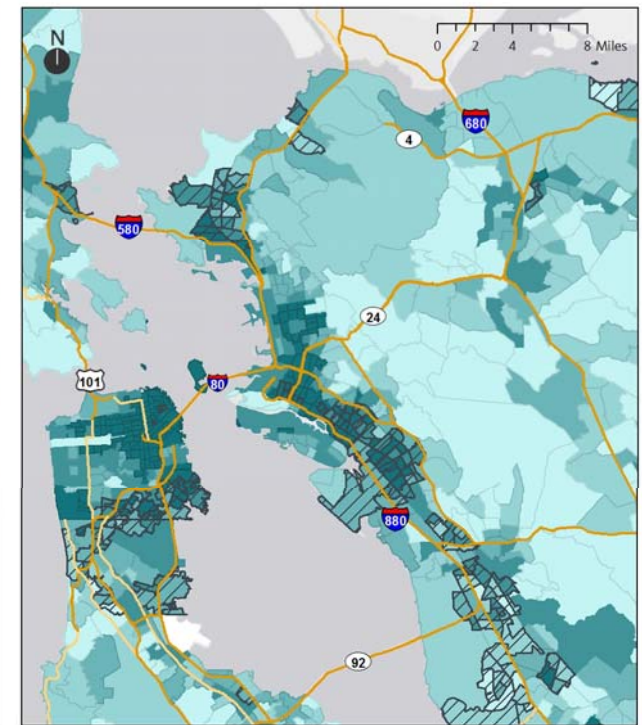
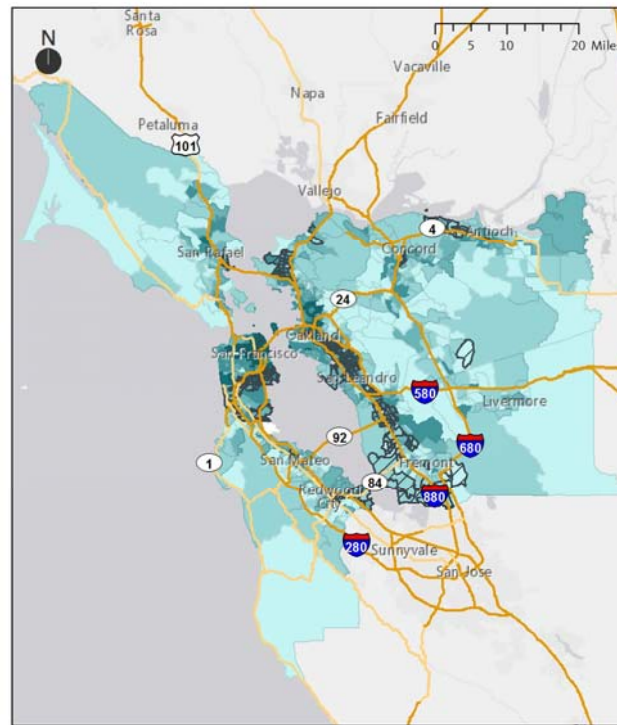
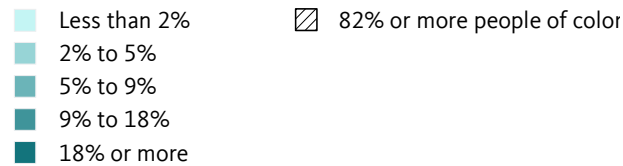
Connectedness

Carless households are concentrated in denser, more transit-rich parts of the region

Although most households have access to at least one vehicle, vehicle access varies across the region. Neighborhoods with relatively high shares of carless households are found in denser portions of the Bay Area with greater access to public transit, such as San Francisco, Oakland, and Berkeley.

Concentrations of households without a vehicle are located in the cities of San Francisco, Oakland, and Berkeley

Percent of Households Without a Vehicle by Census Tract, 2014



Source: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all households (no group quarters). Note: Data represent a 2010 through 2014 average. Areas in white have missing data.

Connectedness

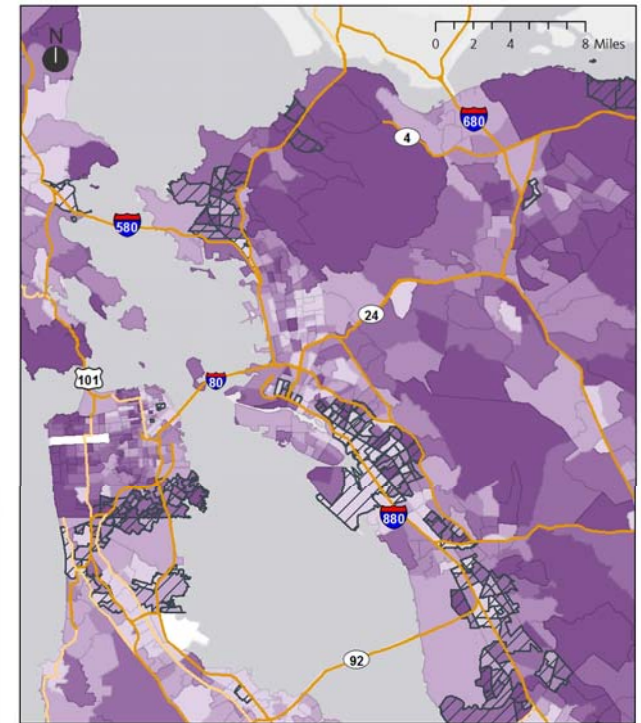
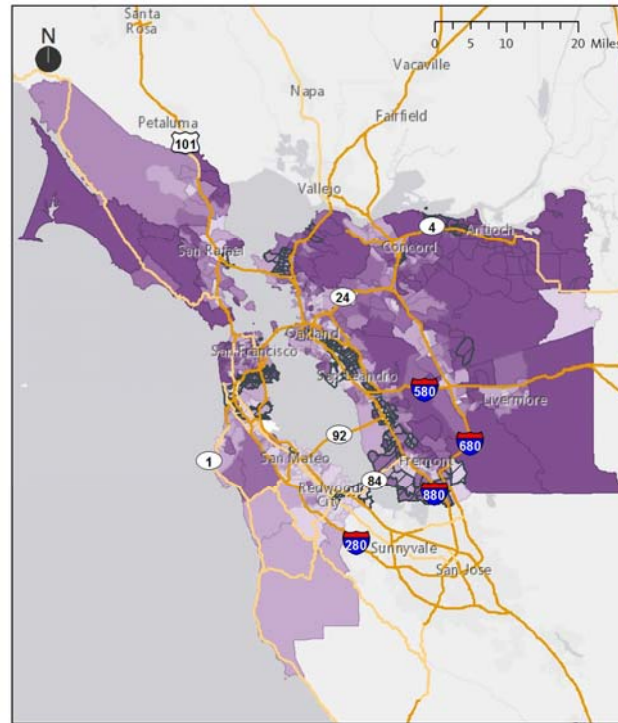
Long commutes for residents throughout the region

Workers living in San Mateo County and along western Alameda County have the shortest commutes. Many of the outer-suburb areas of Contra Costa and Alameda counties, the western neighborhoods in San Francisco, and Bolinas in Marin County have the longest commutes for workers.

Workers throughout the region have long commute times, including neighborhoods in San Francisco

Average Travel Time to Work by Census Tract, 2014

- Less than 27 minutes
 - 27 to 29 minutes
 - 29 to 31 minutes
 - 31 to 33 minutes
 - 33 minutes or more
- 82% or more people of color



Source: U.S. Census Bureau; TomTom, ESRI, HERE, DeLorme, MaymyIndia, © OpenStreetMap contributors, and the GIS user community. Universe includes all persons ages 16 or older who work outside of home. Note: Data represent a 2010 through 2014 average. Areas in white have missing data.

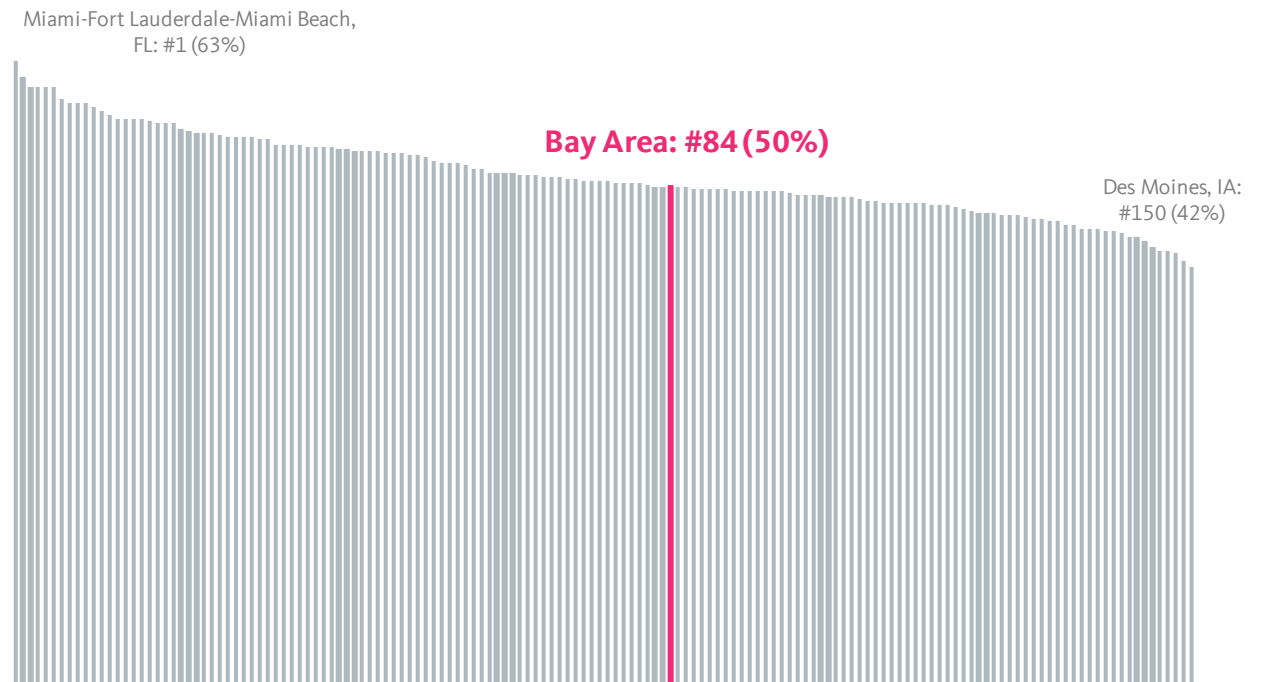
Connectedness

Half of renters in the region are housing burdened

The Bay Area ranks 84th in renter housing burden, but ranks 13th in homeowner housing burden among the largest 150 metros. Half of renters are housing burdened, defined as spending more than 30 percent of their income on housing. Compared with other metros in the West, this is much better than Los Angeles (59 percent) but slightly worse than San Jose (47 percent).

The Bay Area ranks toward the middle for rent-burdened households compared with other regions

Share of Households that Are Rent Burdened, 2014: Largest 150 Metros Ranked



Source: Integrated Public Use Microdata Series. Universe includes renter-occupied households with cash rent (excludes group quarters).
 Note: Data represent a 2010 through 2014 average.

Connectedness

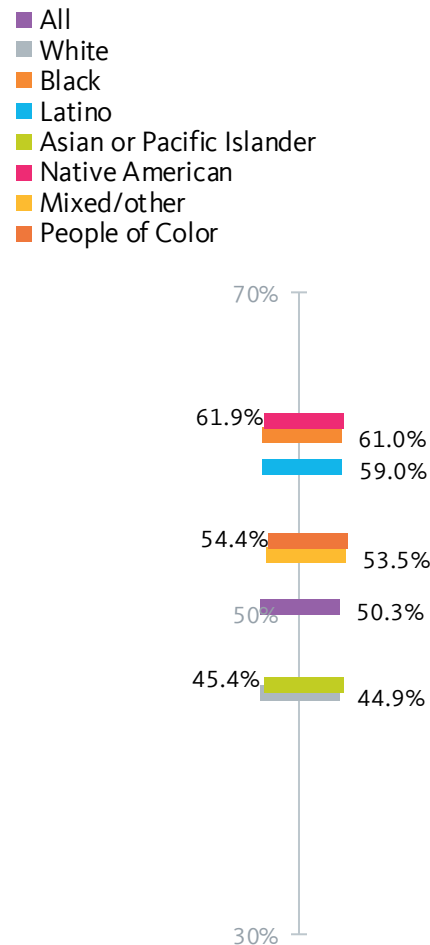
People of color face higher housing burdens

People of color are much more likely than Whites to spend a large share of their income on housing, whether they rent or own. Asian or Pacific Islander renters have a similar housing burden to White renters, but Asian or Pacific Islander homeowners have higher housing burdens than Whites. Housing burden is defined as paying more than 30 percent of household income toward housing.

Native American renters have the highest renter burden at 62 percent. Black and Latino households are consistently more likely than the population as a whole to be cost-burdened regardless of whether they rent or own.

African Americans, Native Americans, and Latinos have the highest renter housing burden

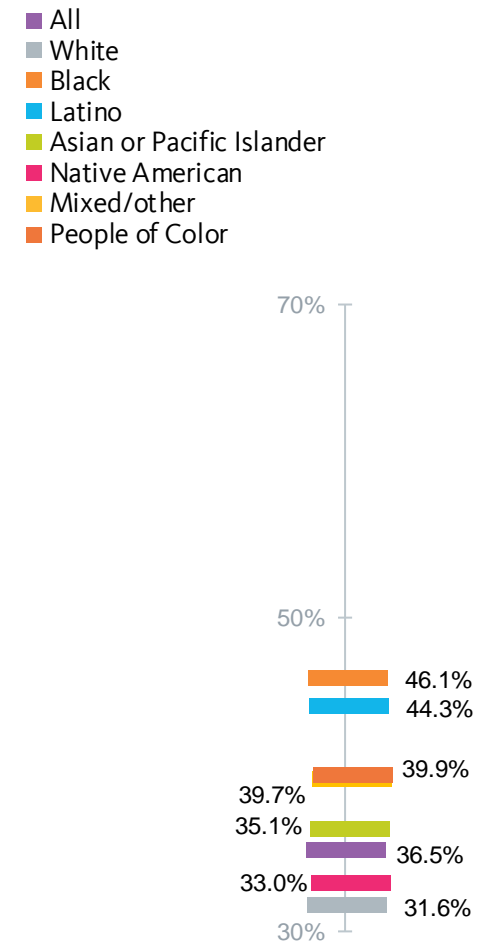
Renter Housing Burden by Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series. Universe includes all renter-occupied households (no group quarters) with cash rent.
 Note: Data represent a 2010 through 2014 average.

Latinos and African Americans have the highest homeowner housing burden

Homeowner Housing Burden by Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series. Universe includes owner-occupied households (no group quarters).
 Note: Data represent a 2010 through 2014 average.

Connectedness

Jobs-housing mismatch for low-wage workers in some parts of the region

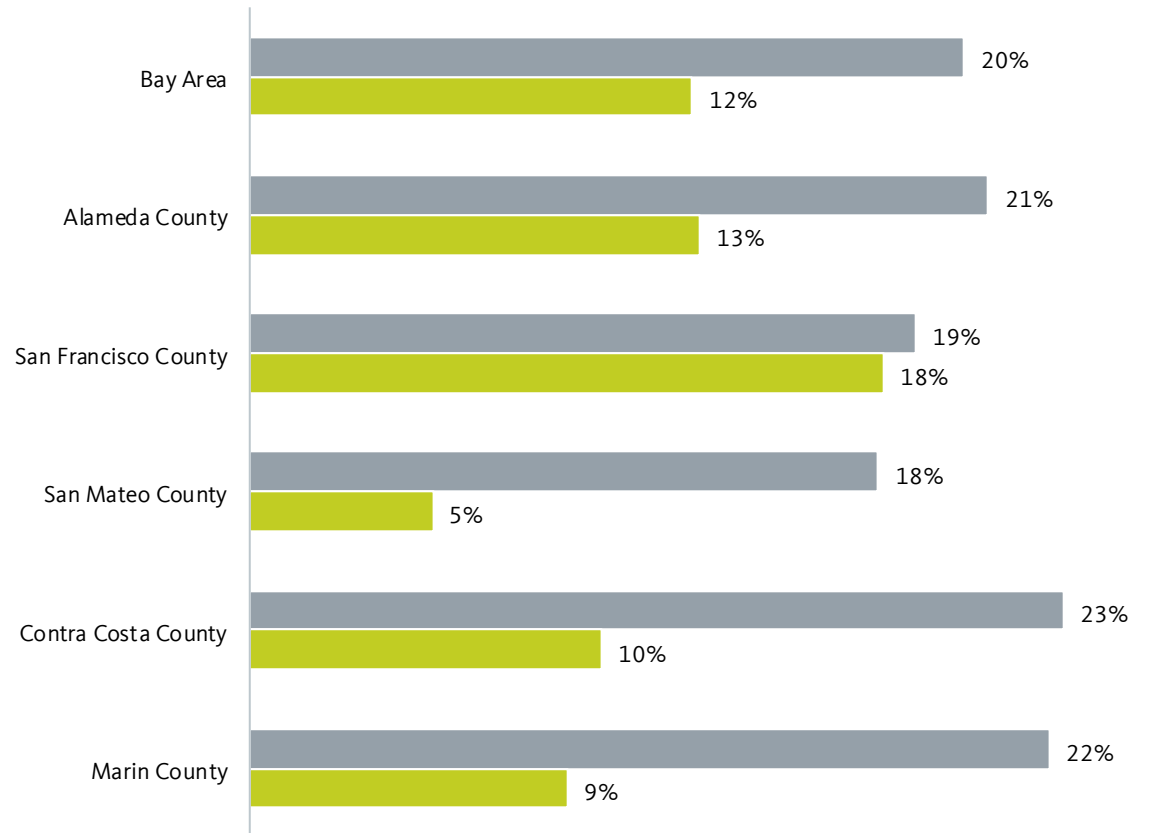
Low-wage workers in the region are not likely to find affordable rental housing. Across the region, 20 percent of jobs are low-wage (paying \$1,250 per month or less) and only 12 percent of rental units are affordable (defined as having rent of \$749 per month or less, which would be 30 percent or less of two low-wage workers' incomes).

San Mateo, Marin, and Contra Costa counties have far more low-wage jobs than affordable rental housing units. Moreover, the higher share of affordable rental housing units in San Francisco is likely due to stronger renter protections and rent control.

Most counties have a gap between the percentage of low-wage jobs and affordable rental housing

Low-Wage Jobs and Affordable Rental Housing by County, 2014

- Share of jobs that are low-wage
- Share of rental housing units that are affordable



Source: Housing data from the U.S. Census Bureau and jobs data from the 2012 Longitudinal-Employer Household Dynamics.
 Note: Housing data represent a 2010 through 2014 average.

Connectedness

Jobs-housing mismatch for low-wage workers in some parts of the region

(continued)

A low-wage jobs to affordable rental housing ratio that is higher in a county than the regional average indicates a lower availability of affordable rental housing for low-wage workers in that county relative to the region overall.

San Mateo, Marin, and Contra Costa counties all have higher ratios than the regional average, indicating a potential shortage of affordable units. San Mateo’s ratio is particularly high, at more than double the regional average.

The range of jobs-housing ratios throughout the region, with San Mateo having the highest affordability mismatch

Low-Wage Jobs, Affordable Rental Housing, and Jobs-Housing Ratios by County

	Jobs (2012)		Housing (2014)			Jobs-Housing Ratios	
	All	Low-wage	All	Rental*	Affordable Rental*	All Jobs: All Housing	Low-wage Jobs: Affordable Rentals
Alameda County	671,397	138,430	551,734	252,717	31,785	1.2	4.4
San Francisco County	608,225	113,086	348,832	215,423	38,123	1.7	3.0
San Mateo County	340,932	59,856	258,683	102,404	5,252	1.3	11.4
Contra Costa County	335,248	76,130	380,183	129,104	12,697	0.9	6.0
Marin County	104,964	23,419	103,034	37,298	3,319	1.0	7.1
Bay Area	2,060,766	410,921	1,642,466	736,946	91,176	1.3	4.5

*Includes only those units paid for in cash rent.

Source: Housing data from the U.S. Census Bureau and jobs data from the 2012 Longitudinal-Employer Household Dynamics.
 Note: Housing data represent a 2010 through 2014 average.

Economic benefits



Economic benefits

Highlights

What are the benefits of racial economic inclusion to the broader economy?

- The region's economy could have been nearly \$138 billion stronger in 2014 if its racial gaps in income had been closed.
- Latino residents would see a 139 percent gain in average annual income with racial equity. Black residents would also see their average annual income more than double with a 116 percent gain.
- Most of these gains would come from closing racial wage gaps between workers of color and White workers.

Potential gain in GDP with racial equity (in billions):

\$137.7

Potential increase in average annual Latino income:

139%

Economic benefits of inclusion

A potential \$138 billion per year GDP boost from racial equity

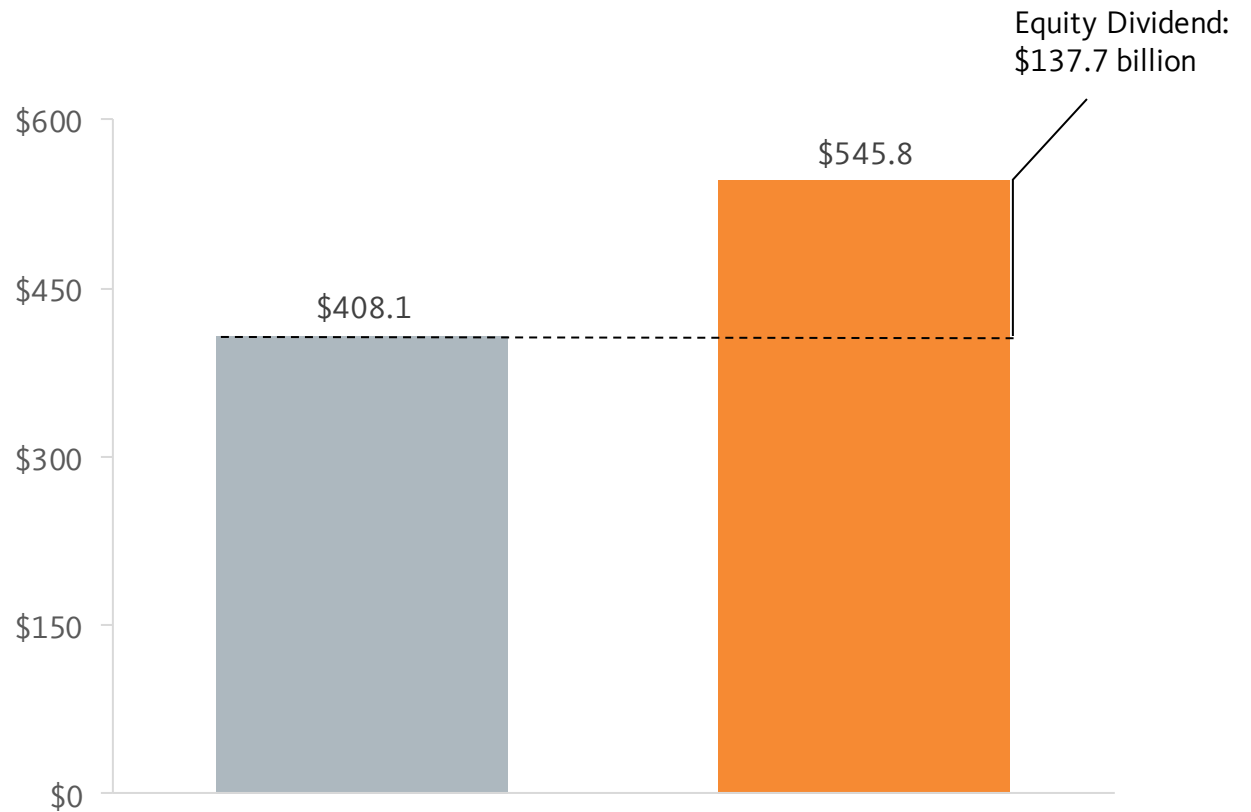
The Bay Area stands to gain a great deal from addressing racial inequities. The region's economy could have been \$138 billion stronger in 2014 if its racial gaps in income had been closed: a 34 percent increase.

Using data on income by race, we calculated how much higher total economic output would have been in 2014 if all racial groups who currently earn less than Whites had earned similar average incomes as their White counterparts, controlling for age.

The Bay Area's GDP would have been \$138 billion higher if there were no racial gaps in income

Actual GDP and Estimated GDP Without Racial Gaps in Income, 2014

- GDP in 2014 (billions)
- GDP if racial gaps in income were eliminated (billions)



Source: Integrated Public Use Microdata Series; Bureau of Economic Analysis.
 Note: Data represent a 2010 through 2014 average. Values are in 2014 dollars.

Economic benefits

Average annual incomes for Blacks and Latinos would more than double with racial equity

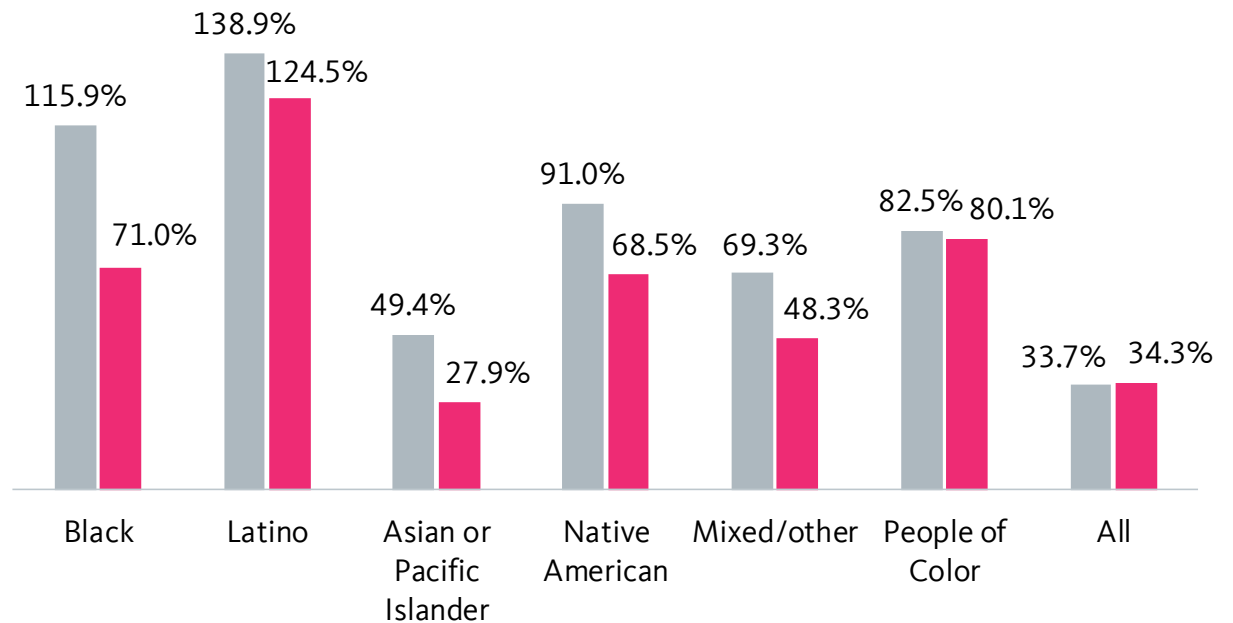
People of color as a whole would see their incomes grow by roughly 83 percent with racial equity. Latinos would see the largest increase in average annual income at 139 percent. Both Black and Latino average incomes would more than double with racial equity.

Income gains were estimated by calculating the percentage increase in income for each racial/ethnic group if they had the same average annual income (and income distribution) and hours of work as non-Hispanic Whites, controlling for age.

Latino, Native American, and Black residents in the Bay Area would experience the largest income increases with racial equity

Percentage Gain in Income with Racial Equity by Race/Ethnicity, 2014

■ Bay Area
■ California



Source: Integrated Public Use Microdata Series.

Note: Data represent a 2010 through 2014 average. Data for some racial/ethnic groups are excluded due to small sample size.

Economic benefits

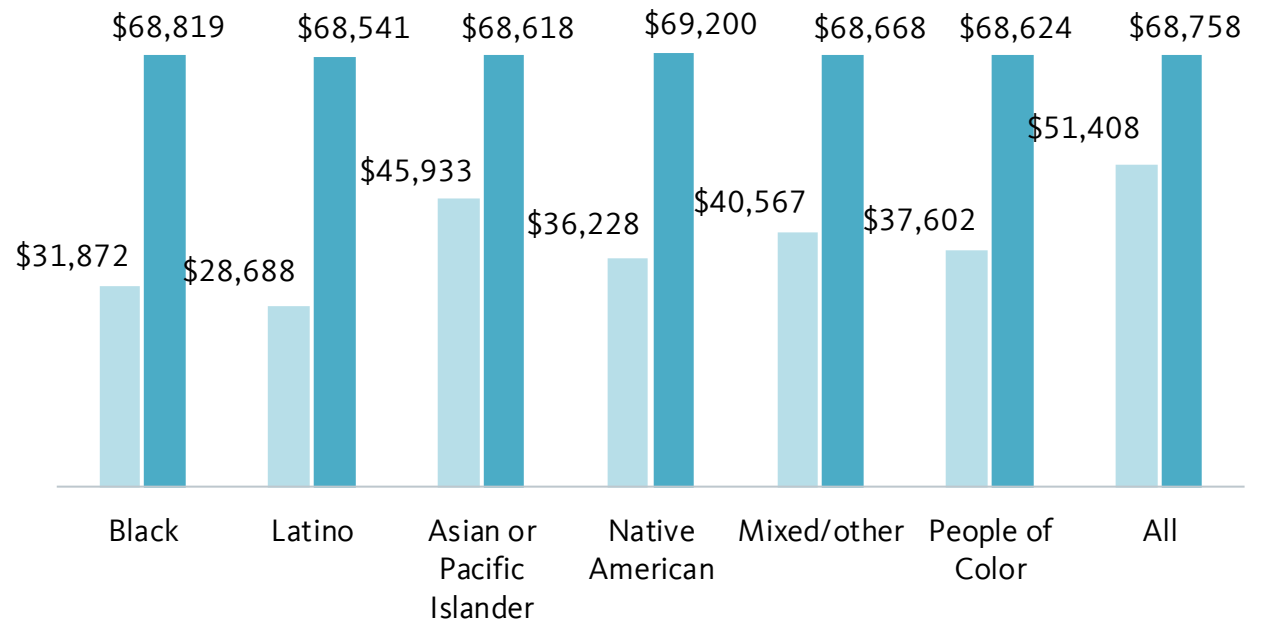
Average incomes for people of color would increase by \$31,000

People of color as a whole would see their average income grow by roughly 83 percent with racial equity, which translates to a \$31,000 increase in annual average income. Latinos would see their average income increase by nearly \$40,000 – growing from \$28,700 a year to over \$68,500 a year.

Latino and Black workers in the Bay Area would experience the largest gains with racial equity

Gain in Average Income with Racial Equity by Race/Ethnicity, 2014

- Average income
- Average income with racial equity



Source: Integrated Public Use Microdata Series.
 Note: Data represent a 2010 through 2014 average. Values are in 2014 dollars.

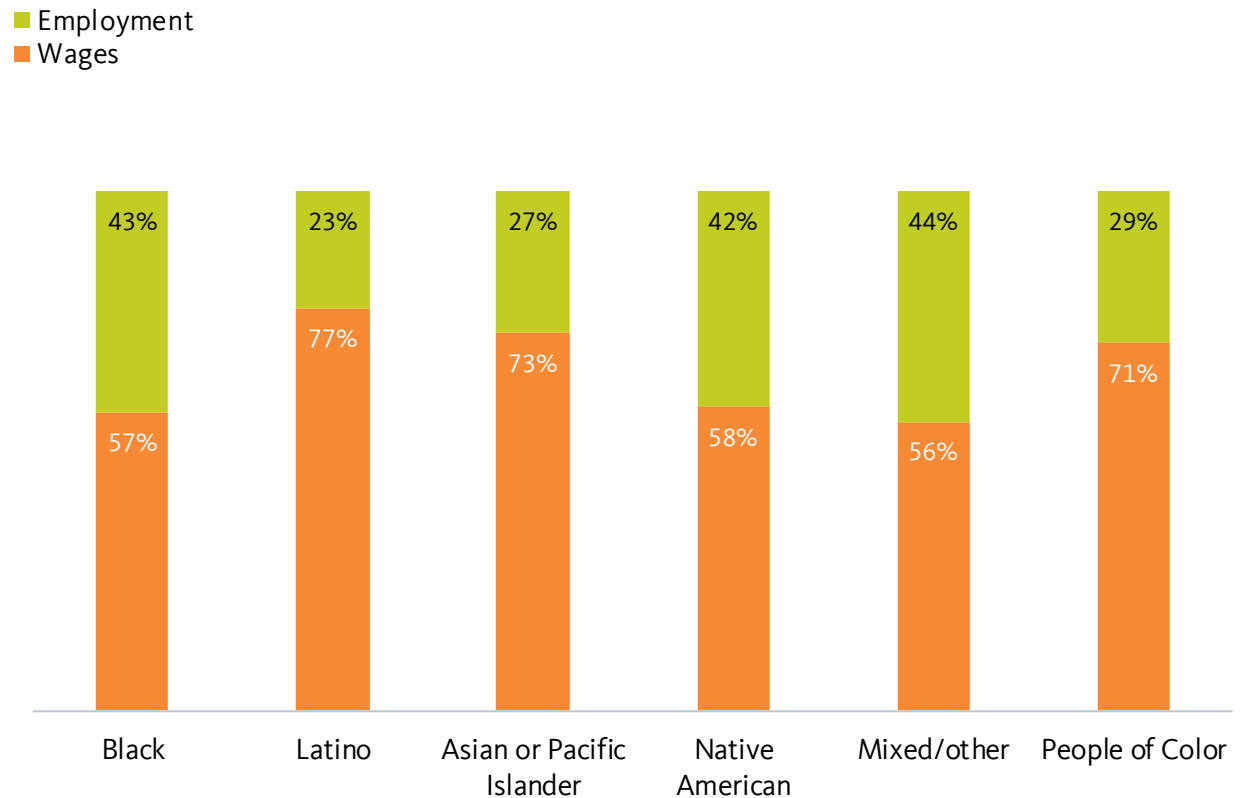
Economic benefits

Most of the potential income gains would come from closing the racial wage gap

We also examined how much of the region’s racial income gap was due to differences in wages and how much was due to differences in employment (measured by employment rates and hours worked). In the Bay Area, most of the racial income gap is due to differences in wages.

For Latinos, just 23 percent of the racial income gap is due to differences in employment and 77 percent of the gap is due to differences in wages. The differences are more balanced among the mixed/other population and Native American population, with 44 and 42 percent of the gap, respectively, due to differences in employment.

Most of the racial income gap is due to differences in wages
 Source of Gains in Income with Racial Equity By Race/Ethnicity, 2014



Source: Integrated Public Use Microdata Series.
 Note: Data represent a 2010 through 2014 average.

Data and methods

95	Data source summary and regional geography	106	Assembling a complete dataset on employment and wages by industry
96	Selected terms and general notes	107	Growth in jobs and earnings by industry wage level, 1990 to 2015
96	Broad racial/ethnic origin	108	Analysis of occupations by opportunity level
96	Nativity	110	Health data and analysis
96	Detailed racial/ethnic ancestry	111	Analysis of access to healthy food
97	Other selected terms	112	Measures of diversity and segregation
97	General notes on analyses	113	Estimates of GDP without racial gaps in income
98	Summary measures from IPUMS microdata		
99	Adjustments made to census summary data on race/ethnicity by age		
101	Adjustments made to demographic projections		
101	National projections		
101	County and regional projections		
103	Estimates and adjustments made to BEA data on GDP		
103	Adjustments at the state and national levels		
103	County and metropolitan-area estimates		
105	Middle-class analysis		

Data and methods

Data source summary and regional geography

Unless otherwise noted, all of the data and analyses presented in this profile are the product of PolicyLink and the USC Program for Environmental and Regional Equity (PERE), and reflect the Five-County San Francisco Bay Area region. The specific data sources are listed in the table shown here.

While much of the data and analysis presented in this profile are fairly intuitive, in the following pages we describe some of the estimation techniques and adjustments made in creating the underlying database, and provide more detail on terms and methodology used. Finally, the reader should bear in mind that while only a single region is profiled here, many of the analytical choices in generating the underlying data and analyses were made with an eye toward replicating the analyses in other regions and regions and the ability to update them over time. Thus, while more regionally specific data may be available for some indicators, the data in this profile draws from our regional equity indicators database that provides data that are comparable and replicable over time.

Source	Dataset
Integrated Public Use Microdata Series (IPUMS)	1980 5% State Sample 1990 5% Sample 2000 5% Sample 2010 American Community Survey, 5-year microdata sample 2010 American Community Survey, 1-year microdata sample 2014 American Community Survey, 5-year microdata sample
U.S. Census Bureau	1980 Summary Tape File 1 (STF1) 1980 Summary Tape File 2 (STF2) 1990 Summary Tape File 2A (STF2A) 1990 Modified Age/Race, Sex and Hispanic Origin File (MARS) 1990 Summary Tape File 4 (STF4) 2000 Summary File 1 (SF1) 2010 Summary File 1 (SF1) 2014 American Community Survey, 5-year summary file 2012 Longitudinal Employer-Household Dynamics, LODES 7 2014 National Population Projections 2015 Population Estimates 2015 ACS 1-year Summary File (2015 1-year ACS) 2010 TIGER/Line Shapefiles, 2010 Census Block Groups 2014 TIGER/Line Shapefiles, 2014 Census Tracts 2010 TIGER/Line Shapefiles, 2010 Counties
Geolytics	1980 Long Form in 2010 Boundaries 1990 Long Form in 2010 Boundaries 2000 Long Form in 2010 Boundaries
Woods & Poole Economics, Inc.	2016 Complete Economic and Demographic Data Source
U.S. Bureau of Economic Analysis	Gross Domestic Product by State Gross Domestic Product by Metropolitan Area Local Area Personal Income Accounts, CA30: Regional Economic Profile
U.S. Bureau of Labor Statistics	Quarterly Census of Employment and Wages Local Area Unemployment Statistics Occupational Employment Statistics
Centers for Disease Control and Prevention	Behavioral Risk Factor Surveillance System (BRFSS)
The Reinvestment Fund	2014 Analysis of Limited Supermarket Access (LSA)
State of California Employment Development Department	2014-2024 Industry Projections 2014-2024 Occupational Projections
Georgetown University Center on Education and the Workforce	Updated projections of education requirements of jobs in 2020, originally appearing in: Recovery: Job Growth And Education Requirements Through 2020; State Report

Data and methods

Selected terms and general notes

Broad racial/ethnic origin

In all of the analyses presented, all categorization of people by race/ethnicity and nativity is based on individual responses to various census surveys. All people included in our analysis were first assigned to one of six mutually exclusive racial/ethnic categories, depending on their response to two separate questions on race and Hispanic origin as follows:

- “White” and “non-Hispanic White” are used to refer to all people who identify as White alone and do not identify as being of Hispanic origin.
- “Black” and “African American” are used to refer to all people who identify as Black or African American alone and do not identify as being of Hispanic origin.
- “Latino” refers to all people who identify as being of Hispanic origin, regardless of racial identification.
- “Asian American and Pacific Islander,” “Asian or Pacific Islander,” “Asian,” and “API” are used to refer to all people who identify as Asian American or Pacific Islander alone and do not identify as being of Hispanic origin.

- “Native American” and “Native American and Alaska Native” are used to refer to all people who identify as Native American or Alaskan Native alone and do not identify as being of Hispanic origin.
- “Mixed/other” and “other or mixed race” are used to refer to all people who identify with a single racial category not included above, or identify with multiple racial categories, and do not identify as being of Hispanic origin.
- “People of color” or “POC” is used to refer to all people who do not identify as non-Hispanic White.

Nativity

The term “U.S.-born” refers to all people who identify as being born in the United States (including U.S. territories and outlying areas), or born abroad to American parents. The term “immigrant” refers to all people who identify as being born abroad, outside of the United States, to non-American parents.

Detailed racial/ethnic ancestry

Given the diversity of ethnic origin and large

presence of immigrants among the Latino and Asian populations, we sometimes present data for more detailed racial/ethnic categories within these groups. In order to maintain consistency with the broad racial/ethnic categories, and to enable the examination of second-and-higher generation immigrants, these more detailed categories (referred to as “ancestry”) are drawn from the first response to the census question on ancestry, recorded in the Integrated Public Use Microdata Series (IPUMS) variable “ANCESTR1.” For example, while country-of-origin information could have been used to identify Filipinos among the Asian population or Salvadorans among the Latino population, it could do so only for immigrants, leaving only the broad “Asian” and “Latino” racial/ethnic categories for the U.S.-born population. While this methodological choice makes little difference in the numbers of immigrants by origin we report – i.e., the vast majority of immigrants from El Salvador mark “Salvadoran” for their ancestry – it is an important point of clarification.

Data and methods

Selected terms and general notes

(continued)

Other selected terms

Below we provide definitions and clarification for some of the terms used in the profile:

- The term “region” may refer to a city but typically refers to metropolitan areas or other large urban areas (e.g., large cities and counties). The terms “metropolitan area,” “metro area,” and “metro” are used interchangeably to refer to the geographic areas defined as Metropolitan Statistical Areas under the December 2003 definitions of the U.S. Office of Management and Budget (OMB).
- The term “neighborhood” is used at various points throughout the profile. While in the introductory portion of the profile this term is meant to be interpreted in the colloquial sense, in relation to any data analysis it refers to census tracts.
- The term “communities of color” generally refers to distinct groups defined by race/ethnicity among people of color.
- The term “high school diploma” refers to both an actual high school diploma as well as a high school equivalency or a General

Educational Development (GED) certificate.

- The term “full-time” workers refers to all persons in the IPUMS microdata who reported working at least 45 or 50 weeks (depending on the year of the data) and who usually worked at least 35 hours per week during the year prior to the survey. A change in the “weeks worked” question in the 2008 American Community Survey (ACS), as compared with prior years of the ACS and the long form of the decennial census, caused a dramatic rise in the share of respondents indicating that they worked at least 50 weeks during the year prior to the survey. To make our data on full-time workers more comparable over time, we applied a slightly different definition in 2008 and later than in earlier years: in 2008 and later, the “weeks worked” cutoff is at least 50 weeks while in 2007 and earlier it is 45 weeks. The 45-week cutoff was found to produce a national trend in the incidence of full-time work over the 2005-2010 period that was most consistent with that found using data from

the March Supplement of the Current Population Survey, which did not experience a change to the relevant survey questions. For more information, see:

https://www.census.gov/content/dam/Census/library/working-papers/2012/demo/Gottschalck_2012FCSM_VII-B.pdf.

General notes on analyses

Below, we provide some general notes about the analysis conducted:

- With regard to monetary measures (income, earnings, wages, etc.) the term “real” indicates the data has been adjusted for inflation. All inflation adjustments are based on the Consumer Price Index for all Urban Consumers (CPI-U) from the U.S. Bureau of Labor Statistics.

Data and methods

Summary measures from IPUMS microdata

Although a variety of data sources were used, much of our analysis is based on a unique dataset created using microdata samples (i.e., “individual-level” data) from the Integrated Public Use Microdata Series (IPUMS), for four points in time: 1980, 1990, 2000, and 2010-2014 pooled together. While the 1980 through 2000 files are based on the decennial census and each cover about 5 percent of the U.S. population, the 2010-2014 files are from the ACS and cover only about 1 percent of the U.S. population each. Five years of ACS data were pooled together to improve the statistical reliability and to achieve a sample size that is comparable to that available in previous years. Survey weights were adjusted as necessary to produce estimates that represent an average over the 2010-2014 period.

Compared with the more commonly used census “summary files,” which include a limited set of summary tabulations of population and housing characteristics, use of the microdata samples allows for the flexibility to create more illuminating metrics

of equity and inclusion, and provides a more nuanced view of groups defined by age, race/ethnicity, and nativity for various geographies in the United States.

The IPUMS microdata allows for the tabulation of detailed population characteristics, but because such tabulations are based on samples, they are subject to a margin of error and should be regarded as estimates – particularly in smaller regions and for smaller demographic subgroups. In an effort to avoid reporting highly unreliable estimates, we do not report any estimates that are based on a universe of fewer than 100 individual survey respondents.

A key limitation of the IPUMS microdata is geographic detail. Each year of the data has a particular lowest level of geography associated with the individuals included, known as the Public Use Microdata Area (PUMA) for years 1990 and later, or the County Group in 1980. PUMAs are generally drawn to contain a population of about 100,000, and vary greatly in geographic size

from being fairly small in densely populated urban areas, to very large in rural areas, often with one or more counties contained in a single PUMA.

While the geography of the IPUMS microdata generally poses a challenge for the creation of regional summary measures, this was not the case for the five-county San Francisco Bay Area region, as the regional geography could be assembled perfectly by combining entire 1980 County Groups and 1990, 2000, and 2010 PUMAs.

Data and methods

Adjustments made to census summary data on race/ethnicity by age

For the racial generation gap indicator, we generated consistent estimates of populations by race/ethnicity and age group (under 18, 18-64, and over 64 years of age) for the years 1980, 1990, 2000, and 2014 (which reflects a 2010-2014 average), at the city and county levels, which were then aggregated to the regional level and higher. The racial/ethnic groups include non-Hispanic White, non-Hispanic Black, Hispanic/Latino, non-Hispanic Asian and Pacific Islander, non-Hispanic Native American/Alaska Native, and non-Hispanic Other (including other single-race alone and those identifying as multiracial, with the latter group only appearing in 2000 and later due to a change in the survey question). While for 2000 and later years, this information is readily available in SF1 and in the ACS, for 1980 and 1990, estimates had to be made to ensure consistency over time, drawing on two different summary files for each year.

For 1980, while information on total population by race/ethnicity for all ages combined was available at the city and county

levels for all the requisite groups in STF2, for race/ethnicity by age group we had to look to STF1, where it was only available for non-Hispanic White, non-Hispanic Black, Hispanic, and the remainder of the population. To estimate the number of non-Hispanic Asian or Pacific Islanders, non-Hispanic Native Americans, and non-Hispanic Others among the remainder for each age group, we applied the distribution of these three groups from the overall city and county populations (across all ages) to that remainder.

For 1990, the level of detail available in the underlying data differed at the city and county levels, calling for different estimation strategies. At the county level, data by race/ethnicity was taken from STF2A, while data by race/ethnicity and age was taken from the 1990 MARS file – a special tabulation of people by age, race, sex, and Hispanic origin. However, to be consistent with the way race is categorized by the OMB’s Directive 15, the MARS file allocates all persons identifying as “other race alone” or multiracial to a specific race. After confirming that population totals

by county (across all ages) were consistent between the MARS file and STF2A, we calculated the number of “other race alone” or multiracial people who had been added to each racial/ethnic group in each county by subtracting the number who were reported in STF2A for the corresponding group. We then derived the share of each racial/ethnic group in the MARS file (across all ages) that was made up of “other race alone” or multiracial people and applied it to estimate the number of people by race/ethnicity and age group exclusive of “other race alone” or multiracial people and the total number of “other race alone” or multiracial people in each age group.

For the 1990 city-level estimates, all data were from STF1, which provided counts of the total population for the six broad racial/ethnic groups required but not counts by age. Rather, age counts were only available for people by single-race alone (including those of Hispanic origin) as well as for all people of Hispanic origin combined. To estimate the number of people by race/ethnicity and age for the six

Data and methods

Adjustments made to census summary data on race/ethnicity by age

(continued)

broad racial/ethnic groups that are detailed in the profile, we first calculated the share of each single-race alone group that was Hispanic based on the overall population (across all ages). We then applied it to the population counts by age and race alone to generate an initial estimate of the number of Hispanic and non-Hispanic people in each age/race alone category. This initial estimate was multiplied by an adjustment factor (specific to each age group) to ensure that the sum of the estimated number of Hispanic people across the race alone categories within each age group equated to the “actual” number of Hispanic origin by age as reported in STF1. Finally, an Iterative Proportional Fitting (IPF) procedure was applied to ensure that our final estimate of the number of people by race/ ethnicity and age was consistent with the total population by race/ethnicity (across all ages) and total population by age group (across all racial/ethnic categories) as reported in STF1.

Data and methods

Adjustments made to demographic projections

National projections

National projections of the non-Hispanic White share of the population are based on the U.S. Census Bureau's 2014 National Population Projections. However, because these projections follow the OMB 1997 guidelines on racial classification and essentially distribute the other single-race alone group across the other defined racial/ethnic categories, adjustments were made to be consistent with the six broad racial/ethnic groups used in our analysis.

Specifically, we compared the percentage of the total population composed of each racial/ethnic group from the Census Bureau's Population Estimates program for 2015 (which follows the OMB 1997 guidelines) to the percentage reported in the 2015 ACS 1-year Summary File (which follows the 2000 Census classification). We subtracted the percentage derived using the 2015 Population Estimates program from the percentage derived using the 2015 ACS to obtain an adjustment factor for each group

(all of which were negative, except for the Mixed/other group) and carried this adjustment factor forward by adding it to the projected percentage for each group in each projection year. Finally, we applied the resulting adjusted projected population distribution by race/ethnicity to the total projected population from the 2014 National Population Projections to get the projected number of people by race/ethnicity in each projection year.

County and regional projections

Similar adjustments were made in generating county and regional projections of the population by race/ethnicity. Initial county-level projections were taken from Woods & Poole Economics, Inc. Like the 1990 MARS file described above, the Woods & Poole projections follow the OMB Directive 15-race categorization, assigning all persons identifying as Other or multiracial to one of five mutually exclusive race categories: White, Black, Latino, Asian or Pacific Islander, or Native American. Thus, we first generated an adjusted version of the county-level Woods &

Poole projections that removed the Other or multiracial group from each of these five categories. This was done by comparing the Woods & Poole projections for 2010 to the actual results from SF1 of the 2010 Census, figuring out the share of each racial/ethnic group in the Woods & Poole data that was composed of Other or mixed-race persons in 2010, and applying it forward to later projection years. From these projections, we calculated the county-level distribution by race/ethnicity in each projection year for five groups (White, Black, Latino, Asian or Pacific Islander, and Native American), exclusive of Other and mixed-race people.

To estimate the county-level share of population for those classified as Other or mixed-race in each projection year, we then generated a simple straight-line projection of this share using information from SF1 of the 2000 and 2010 Census. Keeping the projected Other or mixed-race share fixed, we allocated the remaining population share to each of the other five racial/ethnic groups by applying the racial/ethnic distribution implied

Data and methods

Adjustments made to demographic projections

(continued)

by our adjusted Woods & Poole projections for each county and projection year. The result was a set of adjusted projections at the county level for the six broad racial/ethnic groups included in the profile, which were then applied to projections of the total population by county from the Woods & Poole data to get projections of the number of people for each of the six racial/ethnic groups.

Finally, an Iterative Proportional Fitting (IPF) procedure was applied to bring the county-level results into alignment with our adjusted national projections by race/ethnicity described above. The final adjusted county results were then aggregated to produce a final set of projections at the regional, metro area, and state levels.

Data and methods

Estimates and adjustments made to BEA data on GDP

The data on national gross domestic product (GDP) and its analogous regional measure, gross regional product (GRP) – both referred to as GDP in the text – are based on data from the U.S. Bureau of Economic Analysis (BEA). However, due to changes in the estimation procedure used for the national (and state-level) data in 1997, and a lack of metropolitan-area estimates prior to 2001, a variety of adjustments and estimates were made to produce a consistent series at the national, state, metropolitan-area, and county levels from 1969 to 2014.

Adjustments at the state and national levels

While data on gross state product (GSP) are not reported directly in the profile, they were used in making estimates of gross product at the county level for all years and at the regional level prior to 2001, so we applied the same adjustments to the data that were applied to the national GDP data. Given a change in BEA's estimation of gross product at the state and national levels from a standard industrial classification (SIC) basis to a North American Industry Classification

System (NAICS) basis in 1997, data prior to 1997 were adjusted to prevent any erratic shifts in gross product in that year. While the change to a NAICS basis occurred in 1997, BEA also provides estimates under an SIC basis in that year. Our adjustment involved figuring the 1997 ratio of NAICS-based gross product to SIC-based gross product for each state and the nation, and multiplying it by the SIC-based gross product in all years prior to 1997 to get our final estimate of gross product at the state and national levels.

County and metropolitan area estimates

To generate county-level estimates for all years, and metropolitan-area estimates prior to 2001, a more complicated estimation procedure was followed. First, an initial set of county estimates for each year was generated by taking our final state-level estimates and allocating gross product to the counties in each state in proportion to total earnings of employees working in each county – a BEA variable that is available for all counties and years. Next, the initial county estimates were aggregated to the metropolitan-area level, and

were compared with BEA's official metropolitan-area estimates for 2001 and later. They were found to be very close, with a correlation coefficient very close to one (0.9997). Despite the near-perfect correlation, we still used the official BEA estimates in our final data series for 2001 and later. However, to avoid any erratic shifts in gross product during the years until 2001, we made the same sort of adjustment to our estimates of gross product at the metropolitan-area level that was made to the state and national data – we figured the 2001 ratio of the official BEA estimate to our initial estimate, and multiplied it by our initial estimates for 2000 and earlier to get our final estimate of gross product at the metropolitan-area level.

We then generated a second iteration of county-level estimates – just for counties included in metropolitan areas – by taking the final metropolitan-area-level estimates and allocating gross product to the counties in each metropolitan area in proportion to total earnings of employees working in each

Data and methods

Estimates and adjustments made to BEA data on GDP

(continued)

county. Next, we calculated the difference between our final estimate of gross product for each state and the sum of our second-iteration county-level gross product estimates for metropolitan counties contained in the state (that is, counties contained in metropolitan areas). This difference, total nonmetropolitan gross product by state, was then allocated to the nonmetropolitan counties in each state, once again using total earnings of employees working in each county as the basis for allocation. Finally, one last set of adjustments was made to the county-level estimates to ensure that the sum of gross product across the counties contained in each metropolitan area agreed with our final estimate of gross product by metropolitan area, and that the sum of gross product across the counties contained in state agreed with our final estimate of gross product by state. This was done using a simple IPF procedure. The resulting county-level estimates were then aggregated to the regional and metro-area levels.

We should note that BEA does not provide data for all counties in the United States, but rather groups some counties that have had boundary changes since 1969 into county groups to maintain consistency with historical data. Any such county groups were treated the same as other counties in the estimate techniques described above.

Data and methods

Middle-class analysis

To analyze middle-class decline over the past four decades, we began with the regional household income distribution in 1979 – the year for which income is reported in the 1980 Census (and the 1980 IPUMS microdata). The middle 40 percent of households were defined as “middle class,” and the upper and lower bounds in terms of household income (adjusted for inflation to be in 2010 dollars) that contained the middle 40 percent of households were identified. We then adjusted these bounds over time to increase (or decrease) at the same rate as real average household income growth, identifying the share of households falling above, below, and within the adjusted bounds as the upper, lower, and middle class, respectively, for each year shown. Thus, the analysis of the size of the middle class examined the share of households enjoying the same relative standard of living in each year as the middle 40 percent of households did in 1979.

Data and methods

Assembling a complete dataset on employment and wages by industry

Analysis of jobs and wages by industry, reported on pages 46-47, and 50-51, is based on an industry-level dataset constructed using two-digit NAICS industries from the U.S. Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW). Due to some missing (or nondisclosed) data at the county and regional levels, we supplemented our dataset using information from Woods & Poole Economics, Inc., which contains complete jobs and wages data for broad, two-digit NAICS industries at multiple geographic levels. (Proprietary issues barred us from using Woods & Poole data directly, so we instead used it to complete the QCEW dataset.)

Given differences in the methodology underlying the two data sources (in addition to the proprietary issue), it would not be appropriate to simply "plug in" corresponding Woods & Poole data directly to fill in the QCEW data for nondisclosed industries. Therefore, our approach was to first calculate the number of jobs and total wages from nondisclosed industries in each county, and

then distribute those amounts across the nondisclosed industries in proportion to their reported numbers in the Woods & Poole data.

To make for a more accurate application of the Woods & Poole data, we made some adjustments to it to better align it with the QCEW. One of the challenges of using Woods & Poole data as a "filler dataset" is that it includes all workers, while QCEW includes only wage and salary workers. To normalize the Woods & Poole data universe, we applied both a national and regional wage and salary adjustment factor; given the strong regional variation in the share of workers who are wage and salary, both adjustments were necessary. Another adjustment made was to aggregate data for some Woods & Poole industry codes to match the NAICS codes used in the QCEW.

It is important to note that not all counties and regions were missing data at the two-digit NAICS level in the QCEW, and the majority of larger counties and regions with missing data were only missing data for a

small number of industries and only in certain years. Moreover, when data are missing it is often for smaller industries. Thus, the estimation procedure described is not likely to greatly affect our analysis of industries, particularly for larger counties and regions.

The same above procedure was applied at the county and state levels. To assemble data at for regions and metro areas, we aggregated the county-level results.

Data and methods

Growth in jobs and earnings by industry wage level, 1990 to 2015

The analysis on pages 46-47 uses our filled-in QCEW dataset (see the previous page) and seeks to track shifts in regional job composition and wage growth by industry wage level.

Using 1990 as the base year, we classified all broad private sector industries (at the two-digit NAICS level) into three wage categories: low-, middle-, and high-wage. An industry's wage category was based on its average annual wage, and each of the three categories contained approximately one-third of all private industries in the region.

We applied the 1990 industry wage category classification across all the years in the dataset, so that the industries within each category remained the same over time. This way, we could track the broad trajectory of jobs and wages in low-, middle-, and high-wage industries.

This approach was adapted from a method used in a Brookings Institution report by Jennifer S. Vey, *Building From Strength: Creating Opportunity in Greater Baltimore's Next Economy* (Washington D.C.: Brookings Institution, 2012).

While we initially sought to conduct the analysis at a more detailed NAICS level, the large amount of missing data at the three- to six-digit NAICS levels (which could not be resolved with the method that was applied to generate our filled-in two-digit QCEW dataset) prevented us from doing so.

Data and methods

Analysis of occupations by opportunity level

The analysis of occupations on pages 52-61 seeks to classify occupations in the region by opportunity level. To identify “high-opportunity” occupations, we developed an “occupation opportunity index” based on measures of job quality and growth, including median annual wage, wage growth, job growth (in number and share), and median age of workers (which represents potential job openings due to retirements). Once the “occupation opportunity index” score was calculated for each occupation, they were sorted into three categories (high, middle, and low opportunity). Occupations were evenly distributed into the categories based on employment.

There are some aspects of this analysis that warrant further clarification. First, the “occupation opportunity index” that is constructed is based on a measure of job quality and set of growth measures, with the job-quality measure weighted twice as much as all of the growth measures combined. This weighting scheme was applied both because we believe pay is a more direct measure of

“opportunity” than the other available measures, and because it is more stable than most of the other growth measures, which are calculated over a relatively short period (2005-2011). For example, an increase from \$6 per hour to \$12 per hour is fantastic wage growth (100 percent), but most would not consider a \$12-per-hour job as a “high-opportunity” occupation.

Second, all measures used to calculate the “occupation opportunity index” are based on data for metropolitan statistical areas from the Occupational Employment Statistics (OES) program of the U.S. Bureau of Labor Statistics (BLS), with one exception: median age by occupation. This measure, included among the growth metrics because it indicates the potential for job openings due to replacements as older workers retire, is estimated for each occupation from the 2010 5-year IPUMS ACS microdata file (for the employed civilian noninstitutional population ages 16 and older). It is calculated at the metropolitan statistical area level (to be consistent with the geography of the OES

data), except in cases for which there were fewer than 30 individual survey respondents in an occupation; in these cases, the median age estimate is based on national data.

Third, the level of occupational detail at which the analysis was conducted, and at which the lists of occupations are reported, is the three-digit standard occupational classification (SOC) level. While considerably more detailed data is available in the OES, it was necessary to aggregate to the three-digit SOC level in order to align closely with the occupation codes reported for workers in the ACS microdata, making the analysis reported on pages 58-61 possible.

Fourth, while most of the data used in the analysis are regionally specific, information on the education level of “typical workers” in each occupation, which is used to divide occupations in the region into the three groups by education level (as presented on pages 55-57), was estimated using national 2010 IPUMS ACS microdata (for the employed civilian noninstitutional population

Data and methods

Analysis of occupations by opportunity level

(continued)

ages 16 and older). Although regionally specific data would seem to be the better choice, given the level of occupational detail at which the analysis is conducted, the sample sizes for many occupations would be too small for statistical reliability. And, while using pooled 2006-2010 data would increase the sample size, it would still not be sufficient for many regions, so national 2010 data were chosen given the balance of currency and sample size for each occupation. The implicit assumption in using national data is that the occupations examined are of sufficient detail that there is not great variation in the typical educational level of workers in any given occupation from region to region. While this may not hold true in reality, it is not a terrible assumption, and a similar approach was used in a Brookings Institution report by Jonathan Rothwell and Alan Berube, *Education, Demand, and Unemployment in Metropolitan America* (Washington D.C.: Brookings Institution, September 2011).

We should also note that the BLS does publish national information on typical education

needed for entry by occupation. However, in comparing these data with the typical education levels of actual workers by occupation that were estimated using ACS data, there were important differences, with the BLS levels notably lower (as expected). The levels estimated from the ACS were determined to be the appropriate choice for our analysis as they provide a more realistic measure of the level of educational attainment necessary to be a viable job candidate – even if the typical requirement for entry is lower.

Fifth, it is worthwhile to clarify an important distinction between the lists of occupations by typical education of workers and opportunity level, presented on pages 55-57, and the charts depicting the opportunity level associated with jobs held by workers with different education levels and backgrounds by race/ethnicity, presented on pages 59-61. While the former are based on the national estimates of typical education levels by occupation, with each occupation assigned to one of the three broad education levels

described, the latter are based on actual education levels of workers in the region (as estimated using 2010 5-year IPUMS ACS microdata), who may be employed in any occupation, regardless of its associated “typical” education level.

Lastly, it should be noted that for all of the occupational analysis, it was an intentional decision to keep the categorizations by education and opportunity broad, with three categories applied to each. For the categorization of occupations, this was done so that each occupation could be more justifiably assigned to a single typical education level; even with the three broad categories some occupations had a fairly even distribution of workers across them nationally, but, for the most part, a large majority fell in one of the three categories. In regard to the three broad categories of opportunity level and education levels of workers, this was done to ensure reasonably large sample sizes in the 2010 5-year IPUMS ACS microdata that was used for the analysis.

Data and methods

Health data and analysis

Health data presented are from the Behavioral Risk Factor Surveillance System (BRFSS) database, housed in the Centers for Disease Control and Prevention. The BRFSS database is created from randomized telephone surveys conducted by states, which then incorporate their results into the database on a monthly basis.

The results of this survey are self-reported and the population includes all related adults, unrelated adults, roomers, and domestic workers who live at the residence. The survey does not include adult family members who are currently living elsewhere, such as at college, a military base, a nursing home, or a correctional facility.

The most detailed level of geography associated with individuals in the BRFSS data is the county. Using the county-level data as building blocks, we created additional estimates for the region, state, and country.

While the data allow for the tabulation of personal health characteristics, it is important to keep in mind that because such tabulations are based on samples, they are subject to a margin of error and should be regarded as estimates – particularly in smaller regions and for smaller demographic subgroups.

To increase statistical reliability, we combined five years of survey data, for 2008-2012. As an additional effort to avoid reporting potentially misleading estimates, we do not report any estimates that are based on a universe of fewer than 100 individual survey respondents. This is similar to, but more stringent than, a rule indicated in the documentation for the 2012 BRFSS data of not reporting (or interpreting) percentages based on a denominator of fewer than 50 respondents (see https://www.cdc.gov/brfss/annual_data/2012/pdf/Compare_2012.pdf). Even with this sample size restriction, county and regional estimates for smaller demographic subgroups should be regarded with particular care.

For more information and access to the BRFSS database, see <http://www.cdc.gov/brfss/index.html>.

Data and methods

Analysis of access to healthy food

Analysis of access to healthy food is based on the 2014 Analysis of Limited Supermarket Access (LSA) from the The Reinvestment Fund (TRF). LSA areas are defined as one or more contiguous census block groups (with a collective population of at least 5,000) where residents must travel significantly farther to reach a supermarket than the “comparatively acceptable” distance traveled by residents in well-served areas with similar population densities and car ownership rates.

The methodology’s key assumption is that block groups with a median household income greater than 120 percent of their respective metropolitan area’s median (or nonmetro state median for nonmetropolitan areas) are adequately served by supermarkets and thus travel an appropriate distance to access food. Thus, higher-income block groups establish the benchmark to which all block groups are compared, controlling for population density and car ownership rates.

An LSA score is calculated as the percentage by which the distance to the nearest supermarket would have to be reduced to make a block group’s access equal to the access observed for adequately served areas. Block groups with an LSA score greater than 45 were subjected to a spatial connectivity analysis, with 45 chosen as the minimum threshold because it was roughly equal to the average LSA score for all LSA block groups in the 2011 TRF analysis.

Block groups with contiguous spatial connectivity of high LSA scores are referred to as LSA areas. They represent areas with the strongest need for increased access to supermarkets. Our analysis of the percent of people living in LSA areas by race/ethnicity and poverty level was done by merging data from the 2014 5-year ACS summary file with LSA areas at the block group level and aggregating up to the city, county, and higher levels of geography.

For more information on the 2014 LSA analysis, see https://www.reinvestment.com/wp-content/uploads/2015/12/2014_Limited_Supermarket_Access_Analysis-Brief_2015.pdf.

Data and methods

Measures of diversity and segregation

In the profile, we refer to measures of residential segregation by race/ethnicity (the “diversity score” on page 17, the “multi-group entropy index” on page 77 and the “dissimilarity index” on page 78). While the common interpretation of these measures is included in the text of the profile, the data used to calculate them, and the sources of the specific formulas that were applied, are described below.

Both measures are based on census-tract-level data for 1980, 1990, and 2000 from Geolytics, and for 2014 (which reflects a 2010-2014 average) from the 2014 5-year ACS. While the data for 1980, 1990, and 2000 originate from the decennial censuses of each year, an advantage of the Geolytics data we use is that it has been “re-shaped” to be expressed in 2010 census tract boundaries, and so the underlying geography for our calculations is consistent over time; the census tract boundaries of the original decennial census data change with each release, which could potentially cause a change in the value of residential segregation indices even if no actual change in residential

segregation occurred. In addition, while most of the racial/ethnic categories for which indices are calculated are consistent with all other analyses presented in this profile, there is one exception. Given limitations of the tract-level data released in the 1980 Census, Native Americans are combined with Asians or Pacific Islanders in that year. For this reason, we set 1990 as the base year (rather than 1980) in the chart on page 78, but keep the 1980 data in the chart on page 77 as this minor inconsistency in the data is not likely to affect the analysis.

The formulas for the diversity score and the multi-group entropy index were drawn from a 2004 report by John Iceland of the University of Maryland, *The Multigroup Entropy Index (Also Known as Theil’s H or the Information Theory Index)* available at <https://www.census.gov/topics/housing/housing-patterns/about/multi-group-entropy-index.html>. In that report, the formula used to calculate the diversity score (referred to as the “entropy score” in the report), appears on page 7, while the formulas used to calculate

the multigroup entropy index (referred to as the “entropy index” in the report), appear on page 8. The formula for the other measure of residential segregation, the dissimilarity index, is well established, and is made available by the U.S. Census Bureau at <https://www.census.gov/library/publications/2002/dec/censr-3.html>.

Data and methods

Estimates of GDP without racial gaps in income

Estimates of the gains in average annual income and GDP under a hypothetical scenario in which there is no income inequality by race/ethnicity are based on the 2014 5-Year IPUMS ACS microdata. We applied a methodology similar to that used by Robert Lynch and Patrick Oakford in chapter two of *All-In Nation: An America that Works for All*, with some modification to include income gains from increased employment (rather than only those from increased wages). As in the Lynch and Oakford analysis, once the percentage increase in overall average annual income was estimated, 2014 GDP was assumed to rise by the same percentage.

We first organized individuals ages 16 or older in the IPUMS ACS into six mutually exclusive racial/ethnic groups: White, Black, Latino, Asian or Pacific Islander, Native American, and Mixed/other (with all defined non-Hispanic except for Latinos, of course). Following the approach of Lynch and Oakford in *All-In Nation*, we excluded from the non-Hispanic Asian/Pacific Islander category subgroups whose average incomes were

higher than the average for non-Hispanic Whites. Also, to avoid excluding subgroups based on unreliable average income estimates due to small sample sizes, we added the restriction that a subgroup had to have at least 100 individual survey respondents in order to be included.

We then assumed that all racial/ethnic groups had the same average annual income and hours of work, by income percentile and age group, as non-Hispanic Whites, and took those values as the new “projected” income and hours of work for each individual. For example, a 54-year-old non-Hispanic Black person falling between the 85th and 86th percentiles of the non-Hispanic Black income distribution was assigned the average annual income and hours of work values found for non-Hispanic White persons in the corresponding age bracket (51 to 55 years old) and “slice” of the non-Hispanic White income distribution (between the 85th and 86th percentiles), regardless of whether that individual was working or not. The projected individual annual incomes and work hours

were then averaged for each racial/ethnic group (other than non-Hispanic Whites) to get projected average incomes and work hours for each group as a whole, and for all groups combined.

One difference between our approach and that of Lynch and Oakford is that we include all individuals ages 16 years and older, rather than just those with positive income. Those with income values of zero are largely non-working, and were included so that income gains attributable to increased hours of work would reflect both more hours for the those currently working and an increased share of workers – an important factor to consider given differences in employment rates by race/ethnicity. One result of this choice is that the average annual income values we estimate are analogous to measures of per capita income for the age 16- and-older population and are thus notably lower than those reported in Lynch and Oakford. Another is that our estimated income gains are relatively larger as they presume increased employment rates.



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